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D. K. MINOR, Proprietor.] FOR JULY, 1834. [SAMUEL FLEET, Editor.

ORIGINAL COMMUNICATIONS.

Visit to Throg's Neck, West-Chester County, New-York. By the Editor.

Most of our readers are doubtless aware, that in the vicinity of the city the characteristic features of the scenery on East River or Long Island Sound are very different from those on the Hudson. Along the former, the surface of the land on both sides sometimes approaches the water in long and gentle declivities, at others it presents abrupt banks of a very moderate height. The whole is indented with numerous small bays, harbors, inlets, and creeks, forming many islands and necks. But the Hudson, on the one side, gives almost a straight line, with but little variation of scenery, and on the other the primitive and majestic rocks, called Palisades, rising almost perpendicularly from the margin of the river, presenting no smiling feature to the rising sun, and, when he sinks in the west, extending their long shadow towards the opposite hills.

Throg's Neck lies on the East River, some ten or twelve miles from the city, and is considered the garden of West-Chester county. On the 9th of June, through the politeness of Dr. Beach, we made a visit to this place. The Doctor having found reformation to make but comparatively slow progress among the sons of Esculapius, and finding it an ungrateful task to regulate the ethics of a relapsing world, sent abroad his works, and then sought in rural retirement the scenes and vocations congenial to his taste and feelings. He, within two or three years, went on a tract of land, consisting of ninety acres, mostly level, very superior, but neglected, soil, and lying beautifully on the water's edge. It was purchased at the rate of — dollars per acre. Having but barely commenced operations, Dr. B. has as yet but little to present to the visitor. He devotes his attention to a combined plan of both farming and gardening. He has two acres of Isabella and Catawba grapes, now beginning to bear fruit. He is trying experiments with six or eight other varieties of native grapes. We saw Isabella vines from cuttings of old wood, with grapes on them the first season they were put out. In setting out his vineyard, Dr. B. first makes his ground rich and mellow, and then ploughs a deep furrow, into which the cuttings are put, and then covers them to the proper depth with a return furrow. For two or three years, garden crops are taken from the same ground. Among the crops we saw growing were nearly five acres of early turnips, one of white onions, half an acre of carrots and beets, same quantity of Lima beans, and five acres of corn in drills, with pumpkins. He was about turning over three acres of sward, and planting them with pickling cucumbers. A considerable part of these garden crops were put in with a horse drill. We noticed between two or three acres of turnips, sowed with this machine, in drills six inches apart. They were sowed very uniform, but too thick. This, however, was not owing to any deficiency in the machine. The time taken to sow this quantity was a part of the afternoon. Dr. B. thinks he can sow from five to eight acres per day. The machine sows four rows at a time, opens the drills, and covers small seeds at the same operation. The price is $45. (They can be had of H. Huxley & Co., 81 Barclay street.)

Among the other objects which we saw was a flock of fine Bremen geese. The goslings of this spring were almost full grown. His hog pens contain some twenty-five or thirty hogs and pigs. Without exception, they were the most worthless creatures that we ever laid eyes on. Eight or ten of them were about twelve months old, and would weigh, we should suppose, not to exceed *thirty pounds*, although they had been well fed. They were from a lank-sided and most ill-shaped sow, by a boar of the small grass breed, the most injudicious cross that could be made. The Doctor is convinced that it would be better to bury them in the manure heap, rather than attempt to make pork of them. He has several litters, and they all looked well until about old enough to wean, when they would begin to show themselves defective. Several of his hogs had had the scurvy very bad. They were cured simply by one application of wood ashes. Water is first thrown on the hogs, and then dry unleached ashes. He supposes the disease was occasioned by the large quantities of marine plants thrown into their pens. A purchase had just been made of two fine pigs of the Berkshire breed.

We saw a portion of low ground, on which four lbs. of flesh-colored clover, (*Trifolium incarnatum*,) had been sown. It had come up very poorly, and was about one-third the height which red clover had then attained. Tares on the same ground were in the same unpromising condition. The cream, from which the butter is made in the family, is always brought to sixty-four degrees of Fahrenheit for churning. At this point it readily produces butter.

The next place we visited was that belonging to Mr. Thomas Ash, lying very beautifully on the river, and consisting of about thirty acres of cultivated land, and the same quantity of salt meadow. In the kinds and size of the ornamental trees, in the number and variety of the fruit, in the beauty and splendor of the flowers and shrubbery, in the quantity and advanced state of the vegetables, and in the neatness and perfection with which the whole were kept and grown, we are inclined to think these thirty acres exceed those of any we have ever visited. For very much of this Mr. A. bestows due praise on his gardener, Mr. P. Fanning. The proprietor furnished us with what all persons who own similar places should be able to do, a numerical catalogue of all his fruit and ornamental trees.

Field No. 1, on left hand side on entering the gate.—49 cherry trees, 75 pear trees, 41 apple trees, 50 peach trees, 1620 gooseberry bushes, 95 grape vines, 40 plum trees, 15 apricot trees, 4 butternut trees, 15 black walnut trees, and 5 quince trees.

Field No. 2, opposite to No. 1.—61 cherry trees, 16 pear trees, 75 apple trees, 100 grape vines, 4 quince trees.

Field No. 3, or the young orchard.—220 apple trees, 51 cherry trees, 80 peach trees, 30 pear trees, 1 nut tree.

Field No. 3, behind the barn.—500 gooseberry bushes, 10 peach trees, with a nursery containing about 500 different kinds of superior fruit and ornamental trees.

The Avenue, containing 120 cherry trees, 2 pear trees, 2 Spanish chesnut trees, 2 Siberian crab-apple trees, and 1 quince tree.

The Vineyard.—405 grape vines, 7 pear trees, 2 quince trees, 1000 currant bushes.

Lawn and grounds around the house.—95 cherry trees, 15 plum trees, 20 pear trees, 45 apple trees, 26 peach trees, 30 Madeira nut trees, 5 persemin trees, 25 large cob or English hazel-nut trees, 4 Siberian crab-apple trees, 35 grape vines, 10 Spanish and French chesnut trees, 16 black and white nut trees. It also contains almost every ornamental tree that is known to thrive well in this climate, with some very rare kinds, such as the cedar of Lebanon, and copper beech, thought to be the largest in America. Also, horse chesnuts, elms, and magnolias, upwards of fifty years old.

The Garden contains about 50 grape vines, 500 gooseberry bushes, with every other small fruit in abundance; also, 15 choice plum trees, and 10 pear trees.

Fowl Yard.—6 quince trees, 20 plum trees, 2 nectarine trees.

RECAPITULATION.

376	cherry trees.
155	pear "
387	apple "
181	peach "
96	plum "
19	apricot "
87	nut "
16	quince "
2	nectarine "
1319	fruit trees.
4620	gooseberry bushes, including 1000 small ones.
735	grape vines.
1000	currant bushes.

Some idea may be formed of the amount of the products of this place by the statement of a few facts. Mr. A. supposes he will this season obtain 20,000 clusters of grapes,

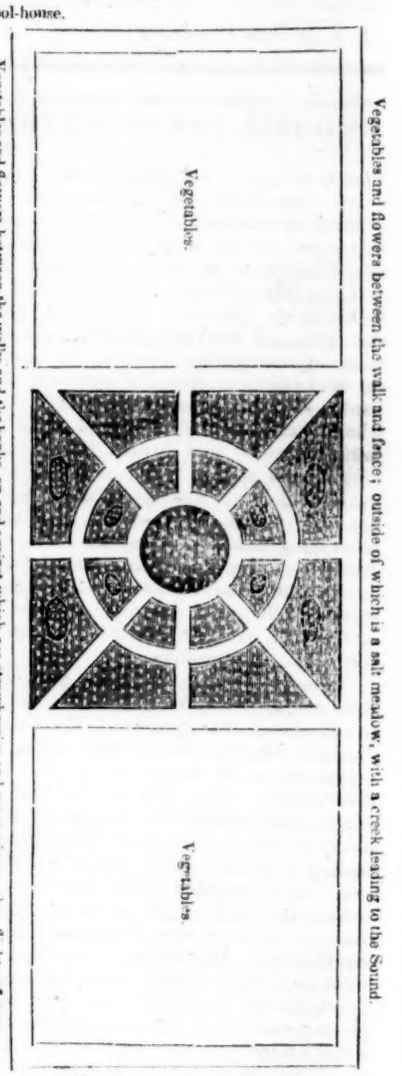
weighing a quarter pound each, and at 8 cents per pound, would amount to $400. He now gathers 40 bushels of large English gooseberries, that bring in market from $5 to $7 per bushel, equalling $240. These were of four varieties, yellow, white, green, and red, very free from mildew. In four years from this time, he calculates his bushes will produce annually 100 bushels. Of his numerous bearing cherry trees, one has returned him $7 the season, paid by boys at the tree. The 30 acres pay yearly the interest of $20,000 at 5 per cent. Every foot of ground appears to be occupied to the best advantage for profit and ornament combined. Although the lawn is large, and interspersed with a very great variety of large forest and fruit trees, yet the whole was covered with a heavy burden of grass. In the vegetable department, every portion of the ground appears to be judiciously managed: wherever there is room for a plant to extend or develope itself, or will be by the timely removal of others, there it is put and made to grow. For instance, space is obtained for the cucumbers and melons to extend by taking up early turnips and radishes; grape vines cover arbors over walks, the ends or sides of buildings, run up on trees, extend along fences, and particularly along stone walls. Mr. A. has not succeeded well with foreign grapes, although he still retains many that had a promising thrifty appearance, and pretty full of fruit. His grass is heavy, probably cutting nearly three tons per acre. On the farm is an inexhaustible source of marsh mud, which is manufactured into manure. This saves a very considerable item in the expense of cultivation. The fowl-house and yard are of considerable size, yet the fruit trees standing in the latter, and the vines trained on the former and along the latter, cause it in reality to occupy comparatively no space. His fowls supply him very plentifully with eggs.

What we much admired, is a very neat haw-haw fence, surrounding three sides of the 30 acres. Along this fence we saw some old cherry trees, whose age was greatly renewed by cutting away the old wood. They were full of fruit. The ornamental trees were generally large, and some of them rare. Among these was the copper beech, a very singular and beautiful tree, the foliage of which is in contrast with all the others, being of a darkish blood red, but changeable in the beams of the sun. Many of these trees were doubtless set out by Philip I. Livingston, who owned the grounds and occupied a portion of them as a nursery fifty years ago. The proper distance of the house from the river, the air of ease which is conveyed in the arrangement of the trees, and their disposition so as to leave the front unconcealed, bespeak very favorably of the taste of the owner. Mr. A. also has shown his taste in allowing these trees to retain their natural ramous appearance, not having disfigured them by the fashionable and excessive use of the pruning axe. He has, too, *as yet*, preserved a view of the front of the house from the river unmolested by trees of any size. In a few years, however, two of the fir tribe, we believe, placed in a short distance of the door, will hide the only part of the dwelling made to be seen. Another excellence in the picturesque, which Mr. Ash has produced, is the concealment, by flowering shrubbery, trees, vines, and creeping plants, of every object that would detract from the beauty of the scene. The flowers, shrubbery, and trees, are so interspersed and carried into the vegetable department, and other portions of the ground, that the transit from one to the other is almost imperceptible, and consequently new and varied beauties and attractions are presented at every step.

Although having spent perhaps two hours in viewing the beautiful grounds of Mr. Ash, yet we were confident of not having seen near all that he had to offer. We then passed a half a mile or more to the farm of Mr. David Austin, of the firm of Austin, Wilmerding & Co., of this city. It consists of 108 acres. The building, which is square, having, in accordance with their conspicuous positions, two full and two semi-fronts, was planned by the former owner, Mr. Elbert Anderson. The architecture we admire. The lawn about the house is a level of eight or ten or more acres. It is covered with a variety of fruit and ornamental trees, and with some shrubbery. The trees are set out neither in regular rows nor in clumps, and yet too close to allow each one to extend and develope itself in its ample and natural form: consequently the two great beauties in natural scenery have been sacrificed—that of a single tree of full developement, and of a collection or cluster. From the windows of the parlor and from the piazza, the lawn is in full view, but very few, or comparatively no flowers. Taking the walk leading towards the river on the east, the visitor suddenly has presented to him a full view of the flower garden, lying directly before him on a level piece of ground some thirty feet below him. The surprise is full, and the effect pleasing. The area of this level piece of ground, which is in the shape of a parallelogram or long square, is two acres, divided into three equal portions or squares, as is represented in the following drawing. The centre one is devoted to flowers, and the two others to vegetables. To reach the garden you descend in a straight line two or three flights of steps, leading to as many level portions of ground of twenty-five or thirty feet wide, covered with grass. The flower garden is a square, having a circular bed of flowers in the centre, with walks towards it from the middle of each side, and from each corner. There are also two other concentric circular walks. The plan of the garden is easily executed, and is, for those who fancy it, adapted to both small and large gardens. The walks were covered with clean sea gravel from Long Island. The flowers were numerous and growing in great perfection, a great number just expanding their full grown buds. Among the flowering plants were 400 large carnations, of numerous varieties, and 72 of the best dahlias. We saw in full bloom a dwarf pea, not more than four to six inches high. The strawberries and grape vines appeared to be under good management; indeed, the whole, coming within the province of the gardener, Mr. Wm. Kerlend, was very creditable to his skill as a grower of plants, and to his industry in keeping them in fine order.

The walk extending from the flower garden, along the furthest or more southern vegetable division, leads to a fish pond. The water rises and falls with the tide by means of an aqueduct leading to the creek. In it were bass two feet long, and weighing fourteen pounds. At a short distance is a fresh water pond, filled with gold and silver fish.

From what we have said, and from the drawing, our readers, we trust, have obtained a pretty correct idea of the lawn and the garden. We shall now proceed to make a few remarks on the plan.*


Tool-house.
Vegetables.
Vegetables and flowers between the walks and fence; outside of which is a salt meadow, with a creek leading to the Sound.
Vegetables and flowers between the walks and the banks, on and against which are strawberries and grape vines—also, flights of steps.
Vegetables.

We think there are objections to this plan. It is very desirable that the sitting-room, parlor, or piazza, and if possible all of them, should command the most beautiful views that can be obtained. The flower garden is a very considerable part of the beauty of rural scenery. Indeed, much of the life and brilliancy of such a scene depends on flowers. It is true that a full view of the floral department is not requisite to form a perfect picture; but sufficient should be seen to animate the prospect, and to excite curiosity, or to enliven imagination. In this particular, Mr. Austin's grounds are defective—no indication of there being a flower garden is afforded from any part of the dwelling. Another objection is, that on coming in view of the garden, not only the whole boundaries are in view, but every bed and plant is seen. The consequence is, that one glance of the eye embraces all that the garden contains, and another surveys the whole lawn.

* Owing to a mistake in the drawing, there should have been one more concentric circle. We will give it corrected in the next.

It therefore requires not five minutes to view the whole of the extensive pleasure grounds. This defect could be remedied by the interspersion of shrubbery and clumps of trees in the lawn, breaking up the monotony, and affording change and variety of scenery. The garden is wholly destitute of trees and umbrageous shrubbery; consequently the vegetables are as conspicuous as the flowers. The interspersion of shrubbery would not only diversify the scene, but afford some retreat from the power of the sun, which until towards evening must be oppressive, rendering a promenade in the garden, so much exposed as this is to the scorching rays, and so much protected from winds from more than half the compass, any thing but pleasant in warm weather. Another objection to this is having the vegetable on each side of the floral department. Independent of the looks, all the manure for, and all the crops and weeds from, one portion of the vegetable garden, must be carried along the walks of the flower garden. Beyond this vegetable division are the fish ponds. These are great additions to ornamental grounds, and should, therefore, be in connection with the flowering rather than the vegetable garden. Indeed, the whole arrangement appears objectionable. There should have been flowering plants on the lawn sufficient to create pleasurable emotions, and to excite a desire to perambulate in quest of the half concealed beauties. Instead of having a straight walk with steps descending to the garden, it should have been serpentine and winding down the bank, around elegant shrubbery, and under the shade of trees. The pleasure arising from the rich and unexpected display of flowers could be excited even more than on the present plan, without having one object in view that would detract from the scene or lessen the admiration. By having the floral department adjacent to the fish ponds, and all the vegetables together, flowering plants could be so placed in the vegetable department as to convey from the walk the impression that the whole two acres were devoted to ornamental purposes. On the present plan, every thing is artificial, stiff, and naked, although both the flowers and vegetables were in admirable condition. We were on Mr. Austin's place not to exceed half an hour, and perhaps four times as long on Mr. Ash's, yet the impression on leaving the latter was that there was much still to be seen, and the former that the eye had caught at least a glimpse of all.

(To be continued.)

Visit to the Linnæan Garden at Flushing.
By D. M. H. [For the New-York Farmer and American Gardener's Magazine.]

[This article was written for the June number of the Farmer, by a gentleman who has since gone on an agricultural excursion to Southern Mexico.—Ed.]

Mr. Editor,—In the hope that what has proved interesting to me may also be of interest to at least a portion of your readers, I send you a few remarks for insertion in your paper, should they be found worthy of the honor; if not, they are still equally at your service, to print them or burn them, just as you like best.

First, then, those of your readers who do not already know it, must be informed that this Flushing is as neat a little place as you might see in a day; and secondly, that one of the most important parts of the town is that celebrated establishment known as the "Linnæan Botanic Garden and Nurseries" of Messrs. Wm. Prince & Sons. Of this very extensive garden much has been said and much written, but all must agree that, in any case, it is a most Prince-ly establishment. There are from 40 to 50 acres under high cultivation, and the collections of plants are most comprehensive. The catalogues (which of themselves compose a sizeable volume) show that the most choice varieties of fruits and vegetables, of every kind, have been here drawn together, whilst the ornamental departments are equally rich in the rare and curious productions of other climes. And let it not be said that the plants named exist only in the catalogues. (*I* have heard the objection.) Let any one so disposed go over the grounds, catalogue in hand, and he will find, that of the articles enumerated very few will be missing, and, if any, it will be only such as have perished by some of those accidents unavoidable in so extensive an establishment, or of which the supply has run out since the publication of the catalogue.

But if I undertake to give you a detailed account of the whole establishment, I shall never have done. I shall confine myself to a few notices of some of the most splendid plants which are now in bloom in the extensive hot-houses, and in the ornamental departments.

The Pæonies first claim our attention. Of this beautiful genus the collection contains fifty-four species and varieties. The most conspicuous of these are the Chinese tree Pæonies, with large and splendid flowers; Pæonia papaveracia, or poppy-flowered, is single, white, with a rich purple centre, and many gold-colored stamina; P. Moutan Banksii has double flowers of very large size, petals at the centre, *purplish rose* color, shaded off to *white* at the edge—this is very fragrant; P. Moutan *rosea* has frequently been, and still is, by many persons, confounded with that last described—but they are vastly different, Moutan rosea being far superior to the other in every respect except fragrance, it having little or no scent. The flowers of P. Moutan rosea are double, very large, and of a pure deep rose color. Besides these, there are many species and varieties just coming into bloom, and presenting a scene of great beauty.

Another superb genus now in great perfection is the Magnolia. M. tripetala, and M. purpurea meet the eye at every turn, the former with its very large and white blossoms, whilst those of the latter are purple on the out-side and white within. M. pyramidala, which produces its flowers but rarely, is now in bloom, whilst buds of great promise peep from amongst the huge leaves of M. macrophylla, or are seen in relief against the dark and shining foliage of M. grandiflora and its superb varieties. There is also a new and very valuable kind, a hybrid production, called Magnolia Thomsoniana, with large semi-double cream-colored flowers of delicious fragrance. The latter property is accounted for by the fact, that M. glauca, our most fragrant species, was one of the parents of M. Thomsoniana.

In another square the eye is dazzled by the splendor of the American Azaleas, (nudiflora and viscosa,) and their varieties, in full bloom. Of these varieties we may say with truth, "Matre pulchra filiæ pulchriores." They appear to be of all shades—pure white, blush-colored, rose-colored, deep rose, straw-colored, bright yellow, orange, flame-colored, scarlet, red, variegated, and different shades intermixed; among the finest are the double red, double white, tri-color, and cuprea. The blossoms are produced in great profusion, whilst every wind that blows over them comes loaded with exquisite odours. The kindred genus Rhododendron has not been neglected in these superb collections. R. catawbiense, R. caucasicum, R. ponticum, and many others, are covered with flowers; but the finest are the two first named. The beauty of their foliage, of a fine shining green, and the richness of tint in their large purple blossoms, well entitle them to this distinction.

To describe the varieties of Geraniums would be an endless task; I will not, therefore, attempt. I have seen many varieties in my time, and some very splendid ones too, but there are some here which surpass any I ever heard of. I will notice two or three fine exotics now in bloom, and close these hasty remarks: Paucratium amancaes, now called Ismene amancaes—this rare bulb was imported by Messrs. Prince from Peru; the flowers appear whilst the leaves are yet small. There are from two to four or more on a stalk; color bright yellow; the crown peculiar to the order is very large in this plant, and bears the stamens inserted on the edges. A ray of bright green runs from each stamen to the centre of the flower. It is fragrant and very beautiful, as well as a rare plant.

Metrosideros. Several species with their fine blossoms, like bunches of crimson silk, are very showy; also, Melaleucas, and a very rare and beautiful plant from New-Holland, (as are the other too,) Lambertia formosa. The flowers of this last are produced in clusters of six or more. They are tubular, of a most delicate rose-color, and some green at the extremities.

I have named to you but few, very few, of the many objects of interest which these extensive gardens present, I will not say to the botanist, or to the gardener, or even to the amateur, but to the man of taste and feeling; to him who can appreciate and admire the beauties of nature, and who, in the indulgence of that admiration, can find a source of pure and wholesome enjoyment. To all such, a visit to a place like this must present attractions; and to all such I would say, yield to the temptation, and go enjoy a walk amidst these varied beauties. But in spite of the proximity of the place, I fear there are many in New-York, who scarce know that there is such a thing as a garden at Flushing; and who, if they did know it, would not, perhaps, go two steps to visit it; yet they, (good people!) hope to be saved as well as their neighbors. It is likely that with them, the road to the *heart* lies through the *stomach*; they think with Dr. Samuel Johnson, about flowers. If so, I may probably find time to write a line or two for their especial edification when I come to speak of the culinary gardens. But of that hereafter: I have troubled you enough for the present, to what purpose you will have to decide. I remain, yours, &c.

D. M. H.

Flushing, L. I., May 24, 1834.

The Relative Pleasures and Profits of Agriculture. By H. W. DELAVAN. To the Editor of the Quarterly Journal of Agriculture, Mechanics, and Manufactures.

SIR,—I have received your letter of the 15th of March, and regret that neither my experience or ability is adequate to do justice to the various topics you have intimated relating to the subject of agriculture.

Since you have paid me the compliment to consult my opinions, I will endeavor briefly to state them, in a manner which will substantially constitute a reply to your several inquiries.

The pursuit of husbandry has not yet attained to the rank to which it is entitled in the northern portion of the United States—a rank which is conceded to it in some other sections of our country, and among the most enlightened nations of Europe. This circumstance will serve to retard advances in this most useful avocation, which a higher estimate on the part of the enlightened classes of our citizens could not fail to create. Yet it cannot be doubted that this department of life will more and more be sought for its intrinsic advantages, presenting as it does a healthful occupation to mind and body, and a stability which no other pursuit can equal. It might seem invidious to institute comparisons among the several occupations incident to civilized life. Let it suffice that each has its appropriate usefulness, and that husbandry is not the least useful or least honorable among them. Many illustrious men have borne testimony to the diversified pleasure of rural life, and that it affords occupation to the most enlarged capacity.

In reply to the question, whether "capital may be properly invested in cultivated land," I confidently answer *it can; and I am of the opinion, that in no other way can a moderate fortune be so profitably employed.* In adopting this conclusion I am supposing the objects to be safety, productiveness, comfortable life, pleasant occupation, the education of children, and the transmission of property to descendants.

It may on a superficial view appear paradoxical, that the cultivation of land can compete in profits with the adventures of commerce, or the operations of machinery. It is the greater uniformity in the products of land, contrasted with the ever fluctuating character of commerce and manufactures, which establishes the point in question. If it be true, as is asserted, that in our own country every twenty years witnesses the *insolvency* of the whole aggregate trading fraternity, what does it not argue in favor of a pursuit in which a man need never fail?

The habits of expense engendered by commerce constitute a heavy annual levy upon the income of the prosperous merchant. Those habits are too likely to survive the prosperity which fostered them, than which a more deplorable condition cannot well be imagined. But he who resides on a landed estate, and practises assiduity, and evinces the intelligence of the merchant, the manufacturer or professional man, may sustain himself during periods of depression without a diminution of capital at any rate. His habits are frugal, which is equivalent to wealth; his daily occupation is a lesson of economy, a term seldom addressed and never palatable to American ears, a virtue as far removed from meanness as it is from prodigality, the more general practice of which could not fail to give greater stability to private and public prosperity.

The trading classes usually incur debts beyond the capital possessed by them, and frequently credit alone is the expedient relied upon. The farmer of even small possession need incur no debts; this difference is vital, and gives to the land proprietor a guarantee of success and certainty which other classes cannot possess. My object in the preceding remarks is to inculcate the idea that to those who are in circumstances to elect their mode of life, agricultural pursuits are most eligible. But in order to succeed in husbandry in the condition of things existing among us, the proprietor must vigilantly conduct his own affairs; he may hire men to labor, but he cannot so readily hire them *to think.* A man with us, who has a respectable capacity, will become a small proprietor rather than a hireling. Agriculture *is not an amusement*, more than law or commerce are such; and what lawyer or merchant could dream of success while leading a life of idleness or pleasure.

Agriculture is not incompatible with mental cultivation; it is favorable to virtue, as the farmer knows nothing of the strifes and rivalries, which grow out of competition in other pursuits, and which lead men to look with an evil eye upon the prosperity or skill of a neighbor. The country resident escapes many of the time-destroying frivolities of the town, and, on the other hand, has fewer of the social advantages which conduce to refinement. These things may be offset to the freedom and healthfulness of rural existence, where man draws less of his satisfaction from others, and more from himself and the works of God, divested of the conventional rules which constitute an artificial existence.

There is one part of your letter which I deem it important to notice, the most practical part, and relates to the articles of culture which an agriculturist should select as his own, among the many. * * *

In determining the objects of culture to which a person attempting farming should select as primary, the circumstances of soil, position, and the price of land, should govern. In western New-York, wheat is the great staple, for the reason that much of the soil of that region is well adapted to its production. The Hudson river counties, on the contrary, seem by the variety of soil to be favorable to the dairy, wool-growing, and stock generally, as also to the growth of all the grains produced in a northern latitude.

What is denominated *convertible husbandry*, or rotation of crops, is the improved feature in modern husbandry, as it conduces to the constant improvement of land; and while it diminishes labor it increases products. Neither grazing or cropping exclusively can be deemed judicious, as both when combined are admirably calculated to aid each other, the former supplying manures to give a profitable effect to the operations of the plough; and besides, the regular employment given to laborers at all seasons, by uniting the different parts into one system, is an advantage which every economist will appreciate.

In conclusion, I would decidedly discourage amateur farming, as it usually is brief in its history, and disastrous in its results. But to such as seek rational employment where a comparative independence may be enjoyed, I would recommend agriculture.

If I may be allowed to speak of my individual undertakings, I would say that in an investment of a large sum in the course of a few years, in lands, improvements, and animals, commenced in inexperience, and misdirected by ignorance, my anticipations of profit have not been disappointed. The nature and magnitude of the trust have tied my attention to its accomplishment, and I have the satisfaction of finding my income yearly increasing, and my expenditures diminishing. I am, sir, yours, &c.

HENRY W. DELAVAN.

Ballston, May 1, 1834.

Remarks on Mr. Berry's Opinions on Improved Breeds of Live Stock. By S. HAWES. To the Editor of the Quarterly Journal of Agriculture, Mechanics, and Manufactures.

SIR,—Having before me some numbers of the British Farmer's Magazine, containing Mr. Berry's observations on the Holkham farming and stock, and other papers by him on live stock, I will, with your leave, make some extracts and observations. All the articles written by Mr. Berry, evince his acquaintance with the subject, united with singular candor and good sense. Though a well known breeder of improved short horns, he allows the Devon ox, of which the Magazine contains an engraving, to be the most complete he "ever put his hand on." The latter expression is full of meaning, though not easy to explain in words. But an experienced man on touching an ox perceives his fattening qualities immediately, or if fat, his condition and quality of flesh. He elsewhere says, "I do not hesitate to say, the form of the Devon, and the disposition of its parts, will be my model in breeding short horns, until I meet with a better." Can greater praise be given! Mr. Berry is not blind to the excellencies of other English and Scotch breeds, which are generally well adapted to their own peculiar soil and climate. In the August number, some of his remarks on "breeding in and in," are valuable. He thinks that public opinion in England is right as to loss of size having arisen from long pursuit of this system. "There is, in truth, no doubt that, take them as a whole, all our superior breeds of cattle are smaller than they were, and every day's experience, and every man's testimony, who really is qualified by experience to give an opinion, confirm me in the conviction that to breeding in and in, the mischief is to be ascribed." He then goes on to instance Bakewell's long horns as "nearly extinct, and much deteriorated." Then as to sheep, "high bred Leicesters have lost in size, and are losing constitution and milk," so that "second and third rate tup breeders are taking the lead with regard to the quantity of business which they transact." The same thing, he says, will happen with the South Downs, if the same system is pursued, and in another paper containing his account of Holkham, we find that it had happened a long time before his visit, as many had witnessed, and I amongst the rest. Mr. B. describes it well—"The South Downs, like the Leicesters, and all improved breeds of sheep and cattle under similar circumstances, began to run to fat, and to want, both in fat and lean condition, lean meat." In fact, they were light, delicate animals, and I well remember their thin skins, small bones, light necks, and want of useful properties. The Smithfield account became bad, as did that of some tenants of

Mr. Coke, who had high bred pampered sheep. But Mr. Coke, amongst his many sterling qualities, is open to conviction; he looked out for a kindred stock and procured some Hampshire Down sheep as a cross for his own flock. The result was most successful, and showed his judgment. His sheep are hardier, heavier, and altogether more useful. Mr. Berry seems almost surprized at the success of the cross, and thinks the experiment must seem bold to any one who has seen the Hampshire sheep. But if he had "put his hand upon them," and felt and weighed them, he would have been convinced of their value. They are not so neat to the eye as South Downs, but better prepared against cold and wet, having thicker skins, more bone, and more wool, indeed covered almost to the ground in many instances. They were wide loined, short legged, and deep carcased: three cardinal points, and are very quiet stock. Their necks are thick, and their hind quarters very heavy. They are real butcher's sheep, and weigh more than they look to weigh. Mr. Berry calls the Holkham South Downs, with this cross in them, the most profitable breed in the island, and says that "A lot of pure South Downs, purchased to be fatted for the use of the house, cut one pound and a quarter each less wool, and of inferior quality, than sheep of the same age, of the improved stock."

In the following paragraph we see how free from all prejudice the writer's mind is:

"All things equal, except purity of blood, I should assuredly give the preference to a pure stock; but if such a stock be evidently rapidly tending towards that state in which *nothing will remain but its purity to recommend it*, why should we suffer ourselves to be fettered by idle, and not merely useless, but mischievous distinctions, acting as if the word *pure* (to which, by the bye, but few stocks can lay claim,) possessed a talismanic power, not only to shield them from deterioration, but to promote their improvement? To some persons all this may sound strangely, coming from a breeder of pure improved short horns. But a fair interpretation of my humble labors in the field of agriculture, will acquit me of ever aiming to promote any thing which appeared otherwise than useful, according to the best of my judgment."

All Mr. Berry's papers will repay a careful perusal, but I have given above those passages that more especially struck me, many of which relate to breeds of sheep which I keep myself. Having land well suited to sheep, yet not strong enough for long wooled sheep, I am a breeder of Downs, though at first necessarily on a small scale. I have both pure South Downs and Hampshire Downs, and certainly prefer the latter kind for this rigorous winter as a hardier sheep. My lambs dropped in February did not seem in the least to suffer from the cold, they are so well protected by nature. The ewes, too, have plenty of milk, from being fed with Swedish turnips: thus the lambs go to grass in good condition, and I am now weaning them, 12th June. They are so strong as to have the full benefit of the grass, but when weaned late the best of the grass; is over, and they are smaller and weaker the following winter than they ought to be. The tameness of these sheep is an invaluable quality: they are easy to drive or to do any thing with, and easy to fatten. The few wethers which I have may now weigh about sixteen pounds per quarter, being sixteen months old, and, like other good sheep, two years is quite long enough to keep them. Some three and four shear native wethers are now at grass with them, wild as deer, and weighing hardly twelve pounds per quarter. These are the remainder of a lot of 120 which I tried to fatten last winter at much higher keeping than I thought right to give my own stock till after lambing: but it should be said that the Downs ate turnips much more readily than the common sheep. How it can answer to keep the latter three or four years, and sell them in October or November, at from one to two dollars, I cannot conceive. Yours, respectfully, S. Hawes.

Albany, June 12, 1834.

Establishment of the Shakers at Pittsfield, Mass. By H. C. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Editor,—I have recently visited the establishment of the Shakers or Friends at Pittsfield, in Massachusetts, and enjoyed the highest gratification in witnessing their improvements, and the proofs which their large farm exhibits of intelligence, mechanical skill, industry, neatness, and perseverance in labor. I meddle very little with the religious notions of other people; well satisfied with my own, I conclude they are equally so with theirs; and bound with the golden rule to do to others as they should do to me, I am no more disposed to encroach upon their rights, than I should be to acquiesce in any encroachment on my own. If I cannot approve the whole, I am willing to give them full credit for any part of a system which produces good fruits; and this industrious, peaceable, honest, quiet, hospitable people, think as we will of their delusions, and peculiar customs, are entitled to kindness and respect.

Their establishment consists of about seven hundred acres, lying together, and is possessed by three large families, containing upwards of three hundred individuals, who are united for all the general purposes of their Society; but who in their financial concerns are separate from each other. The land is not of the best description, being cold, wet, and unfavorable to grain; and their attention is mainly directed to the cultivation of grass and garden seeds, and the keeping of cows and sheep. Their first purpose is for their own supply. They raise the best they can, and they eat the best they raise; and, though from their temperate and careful habits their thrift is remarkable, yet the accumulation of property is evidently not a principal object with them.

They have various mechanical contrivances, by which their labor is abridged or lightened. They have made the best use of the water power which their place furnished, and husband it with care and economy. They have an extensive saw-mill carried by water, and all their fuel is cut in the same way. A simple arrangement, which it may appear trifling to mention, struck me for its shrewdness and good judgment: ordinarily wood is piled horizontally, and when exposed to the weather becomes water-soaked and mouldy. Their billets of wood, before being sawed, were stacked up in convenient piles, the sticks being placed upright on the end, so that any water which fell upon it was immediately drained off. After being sawed they were neatly put under cover.

But what I most admired was their magnificent barn, built of stone, of a circular form, three stories in height, ninety-five feet in diameter, and capable, as well as may be calculated, of containing from three to four hundred tons of hay. The carts enter in the second story; the floor or drive-way is continued round by the wall for the whole of the circle, so that the cart passes round the whole distance, and when the hay is discharged, goes out at the same door at which it entered; and all the hay is deposited in the centre. Twenty four loaded waggons may stand in the floor and be sheltered or unloaded at the same time. The roof is a beautiful and curious specimen of carpentry; and appears to be most securely supported. In the centre of the floor there rises to the apex of the roof a single column, as large as an admiral's mast, around which a hollow frame of slats is fixed, and which serves as a ventilator or chimney, to discharge the steam of the hay, open at the top, and protected by a small cupola against the rain. At the same time the hay is raised from the ground about a foot by an open floor of slats, so that there is, while the hay is new, a constant circulation of air up this chimney; and one of the friends informed me, that the steam passing from the hay in this mode was oftentimes so dense, that, to use his own expression, you could wash your hands in it.

The arrangements for the cattle are in the lower story, where every animal has its place and number, and where every cow is designated in milk or otherwise. In this circular form there is of course a considerable loss of room; yet the mode of feeding is easy, the place is kept clean, the whole arrangements are convenient, and the kindly treated animals standing around this huge mass have at least the pleasure of seeing the good things in store for them.

These worthy friends have singular advantages in the amount of labor which they are able at any time to command and apply to any object which they have in view; and their establishment presents a beautiful illustration of the advantages of well directed industry, neatness, and order. The great rule of domestic economy, "a place for every thing, and every thing in its place," is no where more strikingly exemplified; and though they make no pretensions to the fine arts, and have little of what is called taste, yet all their arrangements, and the products of their labor, exhibit the proofs of thoroughness, permanency, utility, and substantial comfort. H. C.

Moveable Railway for removing Earth and filling up Docks in the City of New-York. By H. C. [For the New-York Farmer and American Gardener's Magazine.]

Mr. Fleet,—In approaching, by the way of the North River, a few days since, your enterprising and continually expanding city, I observed a great many drays, or one-horse carts, employed in removing earth and gravel from a neighboring bank, for the purpose of filling up and making wharves and land on the side of the river.

It occurred to me, and you will make what use you please of the suggestion, that much labor, and a great amount of expense, might be saved, by adopting a moveable railroad, upon which the carts now employed, which would be very convenient, on account of the ease with which they are unloaded, might

with small expense be fitted to run; or others of an improved construction might be adopted. It might indeed be found absolutely necessary to use four wheels instead of two; but even in that case, either by dropping the bottom or the back-board, the load might be discharged without great inconvenience. The labor of the horses might be dispensed with entirely, which would be a very great gain, not only in matter of expense, but of humanity; for their present labor is severe, and often cruel, not only in transporting loads beyond their strength, but in the difficulty of turning the cart when the wheels are sunken in the loose earth. The empty waggons might easily be drawn back by hand; or, if moved on a slightly inclined plane, the full one, by a block at the upper end, might be made to draw the empty cart back, as was practised some years since on a construction of somewhat a similar kind to that now recommended, erected in Boston, for the purpose of removing earth in the western part of that city.

That the plan of moveable rails, which may be taken up and laid down at pleasure on the surface, is neither novel or impracticable, is established by the practice of a Mr. Reed, in England, near Liverpool, who has acquired celebrity by his success in filling up many acres of an extensive bog or marsh, called Chat Moss, and has been sent for to Ireland to advise and direct in similar enterprises, by which means much land, which before was useless and impassable, has been, with earth and gravel, redeemed for purposes of cultivation, and made productive of valuable crops. He lays down several rods of a moveable railway at any point where he wishes to direct his labors; and in this way "removes the deposites" from the neighboring bank in as summary a way as our own government; and not only without complaint, but with the unanimous approbation of both horses and men. The accounts of his successful enterprise may be found in the numbers of the British Farmer's Magazine for 1832 or 1833; but as I have not them at hand, I cannot now more particularly refer to them. Yours, respectfully, H. C.

June 2, 1834.

REMARKS.—We have often thought on this subject—been pained at the cruelty inflicted on the poor faithful beasts—and been fully persuaded that a far better and more humane plan could be devised. An expeditious method of removing and transporting dirt would save, within the incorporated bounds of New-York and Brooklyn, a million of money, and give a great stimulus to improvements.—[ED.]

Cultivation of Hops. By LATHAM. [For the New-York Farmer and American Gardener's Magazine.]

In endeavoring to comply with your wish, to give you the detail of a well cultivated Hop ground, I have done so as briefly as possible. Having found a soil, a friable loam or clay, suitable, as also a site well protected from the northerly winds, and determined on the number of acres to be cultivated, we proceeded to enrich and get the ground into a good state, not sparing the manure of well decomposed horse dung, or, if practicable, sheep, fed off with turnips as a preparatory crop; at any rate, the land must be free from root weeds. In England, vegetation not being so luxuriant, closer planting would be used; but in this country, about 12 feet by 12 will be a good distance.

We will suppose the ground marked out, and holes dug ready for the reception of the sets or cuttings. Lay the lower spit of earth aside, and reverse the upper to be a richer receptacle for the sets; insert three, and cover with the lower spit; if the top soil is as it should be, application of manure is not now necessary. Let the hole be about 18 inches over, and 18 inches deep; mark each set with a small stick.

In the second week in March, if open weather, the shoots will appear; now dig over all the ground, and in a week or two put to each hill a small stake, 4 or 5 feet high: see that the vine readily takes to the pole. Although few or no hops can be expected the first season, yet the plants acquire much strength from climbing the poles. I should have observed, that in the previous autumn the sets should have been placed in the ground, although many prefer the spring planting. When the vine has become withered, the poles may be taken away; this, with always keeping under the weeds, will be all that is necessary the first season. There will be ample room to take an intermediate crop the first season, such as a line of potatoes, turnips, &c. &c.

As soon as the shoots appear in March, the second year, begin to dig all around, and uncover the hills, laying bare the shoots, so that all the vine, with an inch of the crown of the plant, may be cleanly cut off from the hill: a shoemaker's knife, very sharp, is the best tool. The proper shoots will soon appear. Early in April, to each hill put two poles, of about ten or twelve feet high; the third season they will require three poles of fourteen or fifteen feet, and four for all after seasons. Now, to each pole, in May, or when the vine is advanced about eighteen inches in length, select three well grown and clean topped shoots, to tie to the poles, with rushes procured the year previous, and carefully dried. At intervals, the vines must be attended to in climbing the poles. Manure should be added around each hill, and well forked in, though the best season for the application of manures is previous to the spring, or first digging, when it is best incorporated. Variety of manures may be applied with much effect, as old woollen rags cut up, fish, night soil, and, now and then, lime, as a ready means of adapting other manures to be absorbed by the feeding vessels of the plants. At one season, all around the plant will be found a multitude of small fibres put forth in search of food.

The time of picking the hops from the poles will be about the beginning of September; and the period is known by the seed being surrounded by a fine yellow dust, and feeling clammy on pressure; also, the seed itself is purple, the whole capsule is crisp to the feel, and a small leaf, called the lamb's tongue, appears. The future preservative quality of the hop depends much on the drying. Nothing but practice and great care can perfect that operation; an empyreumatic flavor will be acquired by too much heat, or must and mould by imperfect drying, either deteriorating the value in a great degree. LATHAM.

Dr. M'Kinney's Tour in South Florida. [For the Quarterly Journal of Agriculture, Mechanics, and Manufactures.]

MR. EDITOR,—I was in South Florida part of the months of February and March. The climate is mild as that of the tropics, and the growth of timber and plants very much the same as that in the West Indies. The soil may be divided into the following varieties: 1st, The mangrove and marsh lands. These are alluvions from the rivers, of a deep black mould, and are inundated in the rainy season. It will not, however, be difficult to reclaim them, as a dyke two feet high will be sufficient, and when once made will be easily kept in repair, the banks being permanent, the currents gentle, and the rise of water inconsiderable. The mangrove lands are covered with a thick growth of the mangrove bush, and the marsh lands with a luxuriant crop of tall coarse grass. These lands might be profitably cultivated in sugar, sea island cotton, and rice, and some think that the coffee and chocolate plants may succeed equally well.

2d, The hammock lands. These are covered with a thick growth of timber, among which the live oak, mastic wild fig, and gum tree, are most conspicuous. The greater part of the timber is valuable in ship-building. The lands are rocky; the soil a light vegetable, mixed with white sand, sea shells, and other marine exuviæ. They are the principal lands yet cultivated, and produce corn, potatoes, turnips, with other culinary vegetables. Several plants of tropical origin are also cultivated, such as the plantain, banana, pine apple, papaya, and a few others: these produce good crops, and ripen perfectly well, although they are among the most delicate of tropical plants. Limes of an excellent quality grow at the mouth of the Miami river. Corn grows the whole year. I saw it ripe, in silk, and sprouting from the ground, in the month of February.

3d, The pine barrens. These occupy the greater part of the arable lands, and afford but a dull prospect for successful cultivation. They are very rocky, and the soil a white sand; the timber is of a stunted growth, but good for ship-building, and it is said by residents that these lands produce better than their appearance would indicate. At present, they afford subsistence to the greater part of the population of Cape Florida, and are even a source of gain to some. The compti, or Florida sago plant, grows in great abundance throughout these barrens; the root of which, properly ground and macerated, produces a nutricious and wholesome food; and when carefully prepared, is equal to the best Indian arrowroot, as a substitute for which it now finds a ready market in some of our commercial cities. It is prepared at present by a very rude process, and yields 25 per cent., and would doubtless give more if the method of preparing were neater.

The rivers, although navigable, are short in their course. The Miami is but six miles long, and is navigable for steamboats 4 miles. New river is about fifteen miles long, and is navigable nearly the whole distance. They all terminate in the "great everglade," which is the common source of all the rivers and brooks found in South Florida. This immense marsh includes perhaps four-fifths of all the lands south of 28 degrees. It is covered with coarse tall grass, contains lakes and rivers in its bosom, and beautiful islands

of timber are seen to speckle its otherwise unvariegated surface. The soil of these islands is said to be fertile. During the rainy season, boats and canoes navigate this immense morass, and game, fish, and fowl, amply pay the huntsman his labor.

The borders of the everglade are higher than the surrounding lands, hence the water descends with great velocity at the heads of the rivers, affording good sites for water-power machinery; and perhaps, by cutting a canal through this barrier, much good land might be drained in the everglade, and the navigation of the rivers improved. I have seen but few springs; but the river water is pleasant and wholesome, and generally preferred by the inhabitants. Well water is also procured by digging but a few feet.

The Cape Florida settlement is considered very healthy, fevers and catarrhal affections being scarcely known; and, doubtless, if people were well fed and lodged, disease would be less common than at present.

The public is apprized that Dr. Perrine, United States Consul at Campeche, proposed establishing a "tropical plant" nursery at Cape Florida, for the domestication of all tropical exotics useful in the arts, or curious in science. With this object, Dr. Perrine presented a memorial to Congress, on behalf of himself and associates, praying the grant of a tract of land, to be located in South Florida, and to be devoted exclusively to the cultivation of tropical exotics. At the same time, the legislative council of Florida granted an act of incorporation to Dr. Perrine and his associates, as the Florida Tropical Plant Association. Dr. P.'s memorial was referred to a committee which reported favorably thereon, and the report was adopted by the Senate. But owing to the great absorbing question relative to South Carolina, Dr. P.'s memorial met the same fate of all other local questions; and it is probable it will meet the same neglect this session as before, owing to the great excitement now existing in both houses of Congress. Notwithstanding the failure of his project before the councils of the nation, Dr. P. continues to persevere in his favorite plan. He is now establishing, "unaided and alone," a nursery of tropical plants at Cape Florida, and has transplanted thither many exotics before unknown in this country. He has devoted for several years the most assiduous attention to the history and mode of cultivation of the many fibrous plants cultivated in tropical latitudes, with the view of transplanting them to his native country.

It is thought by some that South Florida will not suit the growth of tropical vegetation; but facts prove it will. Frosts are unknown. The most delicate vegetables grow equally in winter as in summer, and many plants indigenous to the tropics are also indigenous to Cape Florida, among these are several species of agave, (henequen, or Sisal hemp,) and cactus, which I have never seen except in hot climates. But from the impossibility of acquiring lands with secure titles, some time must elapse before Dr. Perrine will be enabled to prosecute with effect his experiments. Lands of government are as yet unsurveyed, and Spanish claims have not been entirely confirmed, so as to leave no doubt of their titles. Would it not be advisable that Congress, at as early an hour as practicable, should bring these lands into market, thereby opening a new source of pecuniary and scientific enterprize to our countrymen?

Princeton, 14th June, 1834.

REMARKS.—We learn from a correspondent of the Farmers' Register, that in Middle Florida, "marl is not rare, the whole country being based on a shell rock."

List of Articles presented to the Inspecting Committee of the New-York Horticultural Society. [Communicated for the New-York Farmer and American Gardener's Magazine.]

March 11. D. Hosack presented 2 bunches of asparagus, cut at his place at Hyde Park, on the 7th instant, grown by his gardener, Mr. Edward Sayres.

Mr. Alexander Knox, sen., presented 2 pots polyanthus, viz., Waterton's hero, and Wilson's favorite, both of them very finely marked.

March 18. —— Holbrook, Esq., presented a brace of early long Southgate cucumbers, one measuring 9½ inches long, and 5½ inches in circumference; the other 8 inches long, and 4½ inches in circumference, both cut on the 13th instant, and grown at Hyde Park, by his gardener, Mr. D. Connor.

April 1. Mr. Thomas Hogg presented the following varieties of pelargoniums, viz.: poculifolium, Lady Bingham, rotundilobium, fastriosum, Juliet, hetromallum, Lady Nugent, albinotatum, urbanum, glorianum, Moore's Navarino, hammattia, and 2 seedlings.

April 22. Mr. Wm. Neale presented several beautiful flowers of Rosa odorata sanguinea, and monthly China, also Phlox stolonifera, Viola grandiflora, and 12 varieties of early tulips.

Mr. Thomas Hogg presented flowers of Rosa bengalensis, Wisteria sinensis, Azalea sinensis, Kennedia vimaculata, Cistus salvifolius; and the following varieties of pelargoniums, viz.: Youngii urbanum, Lady Bingham, instratum, involucratum superbum, Drakeii rubinum, lady Nugent, Juliet, splendens, hetromallum albinotatum, hammattia, Moore's Navarino, Blakeanum, glorianum, Lady Maryboro, Brown's Lady Gore, Juno, Feronia, Fastuosum, ursinum, Reuben Apsley nervosum, copliae poculifolum, mollifolium, and rotundilobium.

April 29. Mr. Thomas Hogg presented the following varieties of pelargoniums, viz.: Peckii, Hosackii, urbanum, ursinum, poculifolium, Lady Bingham, Juno, mollifolium, ramigerum, Franklinii, Navarino nervosum, Augustum, Lavatobium Queenii, Gowerii superba, instratum, Feronia, rotundifolium, Miss Yeatman, Fastuosum, Rubinum, Reuben Apsley, copliae, hammattia, hetromallum, Moore's Navarino, Princess Augusta, involucratum superbum, Brown's Lady Gore, decora, Juliet, Lady Maryboro, macranthon, drakeii, pavonia, belle gabrielle, rubescens, Admiral Codrington, glorianum, pictum, quercifolium superbum, Blakeanum ignescens, ardescens, and a fine seedling.

Charles Oakley, Esq. presented a beautiful boquet, consisting of double flowering almond, mesembryanthemums, roses, geraniums, Kalmia latifolia, and other flowers.

It is worthy of remark that Mr. Oakley has succeeded in growing the kalmia in a greenhouse, and causing it to bloom thus early in the season, thereby forming a great acquisition to the greenhouse.

May 6. Mr. Boll, of Bloomingdale, presented 2 beautiful pelargoniums, viz.: Duchesse d' Angouleme, and General Moreau, and 9 seedlings, some of which were very fine, also a spike of flowers of Crotalaria elegans.

—— Holbrook, Esq., of Hyde Park, presented 2 of Fitch's rock melon, one measuring 22 inches in circumference, and weighing 5 lbs., cut on the 30th of April, also 2 quarts of early pink-eyed potatoes, grown by his gardener, Mr. D. Connor.

May 13. Mr. Alexander Knox, sen., presented the following varieties of pelargoniums, viz.: Macranthon, Drakeii, Peckii, Miss Yeatman, Princess Augusta, Lady Van Rensselaer, urbanum, decora, ignescens, ramigerum, Reuben Apsley, Glorianum, and 2 others not named; also, Campanula persicifolia, alba, simplex, and pleno, Calceolaria rugosa, musk cluster rose, tea rose, Ranunculus acontifolius pleno, Heliotropium grandiflorum, and Senecio elegans pleno.

Mr. Wm. Reid presented flowers of Halesia tetraptera, Tartarian honeysuckle, and Scotch broom.

Mr. Thomas Hogg presented flowers of Passiflora herbertiana, Dodecatheon meadia, and alba, Spirea hypericifolia, Cercis siliquastrum, Caltha palustris pleno, Stylidium adnatum, Aloe margaratifera, Viola pedata, rosa Lafayette, Lillium concolor, Iberis perrenis, Dolichos lignosus, Kennedia vimaculata, Phlox verna, and divaricata, Clematis florida pleno, Arabus grandiflorus, Coronella emerus, Cymbidium hyacinthinum, and Acacia pulchella.

May 20. Charles Oakley, Esq., presented a fine specimen of Cactus speciosus, in bloom, and a flower of Calla ethiopica, the stem of which measured 4 feet in height.

Mr. Thomas Dunlap presented 2 beautiful boquets, containing flowers of Pæonia moutan, iris's, hawthorn, tulips, lilacs, guelder roses, stock gillies, laburnum, roses, double agrostemma, Gillia capitata, geraniums, viburnum, double narcissus, and other flowers.

Mr. Thomas Hogg presented a very large flower of paconia moutan.

May 27. Mr. Wm. Reid presented the following beautiful varieties of the Scotch rose, viz.: Aurora, Mrs. Hooker's Hecuba, Celia, Jonas, Ajax, Countess of Dunmore, Proteus, Silvia, Lady Castle Coote, and Portia; also, flowers of Halesia diptera.

Mr. Thomas Dunlap presented a very fine seedling geranium, double yellow ranunculus, stock gillies, China roses, pinks, laburnum, Gillia capitata, and Rosa Harrisonia.

J. J. Palmer, Esq., presented flowers of the Dictamnus fraxinella rubra, Rosa bengalensis, Lupinus polyphyllus, a beautiful hardy perennial plant, and Rosa Harrisonia.

Mr. Thomas Hogg presented flowers of Lasiopetalum purpureum, a very pretty and rare plant from New Holland, Polygala speciosa, a very showy scarce plant, and Rosa Harrisonia, a very superb new double yellow rose.

June 3. Mr. N. Dick, (gardener to —— Chesterman, Esq., of Harlaem,) presented one quart of early peas, grown in the open air.

Mr. Alexander Knox, sen., presented 2 very fine carnations, viz., Finlayson's majestia, and M'Donald's No. 120, also 2 species of mesembryanthemums, and double ranunculuses, laced pinks, &c.

June 10. Mr. Alexander Knox, sen., presented Ford's fine seedling, Waterston's

Navarino, and 5 or 6 other very beautiful varieties of Pinks, also several very fine seedlings of the same flower, and 3 very beautiful Carnations, viz. Smith's Sir Solomon, Pottet's Princess Royal, and Maud's Router; also, 9 beautiful specimens of double Ranunculuses.

E. H. Warner, Esq., presented 15 early Cherries.

Mr. Wm. Reid presented flowers of Chionanthus virginicus, Valeriana rubra, Robinia hispida, 12 varieties of Scotch roses, 6 varieties of beautiful laced pinks, evergreen Pyracantha, purple noisette, and 6 varieties of garden roses.

Mr. Thomas Hogg presented flowers of Amorpha fruticosa, Pæonia Humcii, Whitleyii, and fragans, 13 species of Iris, Philadelphus grandiflorus, Hemerocallis disticha, Galardia aristata, Orobus nigra, Clematis erecta, Penstemon obovata, Spirea philapendula pleno, Viscaria alba and rubra, Amsonia salicifolia, Ornithogalum pyramidalis, Albium Moly, and 12 varieties of garden roses.

Mr. Wm. Neale presented flowers of Spirea philapendula pleno, Pæonia Whitleyii, viola grandiflora, and Verbena chamædri folia.

JAMES HOGG,
Secretary of the Inspecting Committee.

NEW PUBLICATIONS.

The Complete Farmer and Rural Economist; containing a Compendious Epitome of the most Important Branches of Agricultural and Rural Economy. By THOMAS G. FESSENDEN, Esq., Editor of the New-England Farmer. Boston: Lilly, Wait & Co., and G. C. Barrett, 1834.

We are indebted to Mr. Barrett for a copy of this handsomely executed duodecimo work, of near 400 pages. It is principally a compilation and abridgment of American writers, particularly of the periodical press. Mr. Fessenden, as the whole reading portion of the agricultural community well know, is pre-eminently the person to make a judicious selection from the many valuable articles and works that have appeared for the last fifteen or twenty years, either on or applicable to the various objects of American husbandry.

As a specimen of the work, and as apropos to the season, we copy the articles on turnips and harvesting.

RUTA BAGA.—The following is an account of the method of cultivating Ruta Baga, adopted by the Rev. Henry Colman, in obtaining a crop for which he received a premium of $20 from the Massachusetts Agricultural Society in the year 1830. From the N. E. Farmer, vol. ix, p. 284.

Gentlemen,—Accompanying this you have the certificates of a crop of Ruta Baga, raised this year on my farm in Lynn. From these it will appear that on an acre, measured by a sworn surveyor, on one side of the field, there were gathered 741 baskets full; and that forty baskets of the above named, weighed at the town scales 2750 lbs. net weight. This, allowing 56 lbs. to a bushel, the standard weight assumed by the Society, would give a crop of 903 bushels to the acre.

The turnips were planted on the 29th of June and 2d of July; about one pound and a half of seed was used for the acre; and they were gathered and stored in cellars and in the barn, in the last part of November.

The ground on which they grew is a good soil, neither wet nor dry, and bore the last year an abundant crop of onions, and corn the year preceding the last. It was well manured at both times, and in fine tilth. It was manured with at least six cords to the acre of barn-manure the last spring, and sowed again to onions; but the seed entirely failing, it was ploughed, harrowed, furrows struck out, and about eight cords of barn-manure spread in the furrows; ploughed again, so as by a back furrow to form a ridge over the manure, and the seed sown with a small drill-harrow on the ridges, making the rows about twenty inches asunder. As soon as the plants were of sufficient size, a drill-harrow, with small shares fixed to it, to cut off all the weeds, was passed through the rows: and the plants thinned with a small weeding-hoe to the distance of about eight inches apart, and the vacant places filled up by transplanting from the supernumerary plants. They were once more harrowed and cleaned, which was a very small labor; and owing to the very unpropitious weather, were not harvested until very late. Some of them were very large; one weighed 15 lbs., and many were nearly as large. The exact expense of cultivating the acre cannot be estimated, as it was intermixed with other farm-work; but the whole, from the sowing to the gathering, was not two-thirds of the labor usually bestowed on planting, cultivating, and gathering an acre of potatoes.

My Swedish Turnips the last year, of which I raised considerable quantities, were fed off to my oxen, dry cows, young stock, and fatting sheep. To the cattle they were of very great advantage; and for feeding sheep, they proved the last year, by an accurate account, worth from ten to twelve and a half cents per bushel.

The man who has the care of my stock, considers them as among the most profitable feed which can be given, either to fatting or to store cattle. Three years' experiment has increased their value very much for these purposes, in my own estimation.

I am, gentlemen, very respectfully yours,
HENRY COLMAN.

A correspondent in the N. E. Farmer, vol. xi., p. 277, writes thus:

'A wish to have others profit by my experience has induced me to send you, Mr. Editor, half a sheet of remarks on the culture of the Ruta Baga, as a food for domestic animals. I have cultivated from half an acre to three acres of this root every year for thirteen years in succession, and feel competent to give rules for its culture, and confidence in recommending it as a valuable and profitable crop.

'The soil must be rich and dry; and the more it inclines to a sand loam the better. Clay is the worst, and wet soils will not answer at all.

'*Preparations.*—My general practice has been to manure well a piece of pasture, or clover ley, from which the hay has first been cut, plough it handsomely over, and harrow it well.

'*Sowing, &c.*—I sow in rows, at two and a half or three feet, with a drill-harrow. The sooner the preceding operations succeed each other the better. I have sown broadcast, but the expense of thinning and culture is increased. A man will drill in three or four acres a day. We allow a pound of seed to the acre, though half this, properly distributed, is enough. Sow from the 26th of June to the 10th of July.

'*Culture.* I use a cultivator, that may be graduated to the space between the rows, drawn by a horse, as soon as the plants can be well distinguished. This is repeated in a few days, back and forward, and the implement carried so close to the drills, as to leave only strips of from four to ten inches, which are then thoroughly cleaned with a skim hoe, and the plants thinned to eight and ten inches distance. The cultivator soon follows for a third time, and if necessary, the skim-hoe, when the crop is generally left till harvest; the great aim is to extirpate the weeds, and to do this while they are small.

'Harvesting is postponed as long as the season will permit. The roots are then pulled up, and laid on the ground, the tops of the two lo ws towards each other. The pullers are followed by a man or boy with a bill-hook, who, with a light blow, cuts the tops as fast as three or four can pull. Three men will in this way harvest, of a good crop, 300 bushels in a day. The tops are gathered into heaps and taken to the yard in carts, daily, for the stock until they are consumed. An acre will give from five to ten cart loads of tops. The roots are piled in the field if dry,—the pits, two or two and a half feet broad, covered with straw and earth, and as cold weather approaches, with manure, to prevent frost. N. B.—With a crowbar make one or more holes on the crown of the pit, which must be left open, to let off the rarefied air and prevent the roots from heating.

'*Use.*—The tops serve for autumn. As soon as the mild weather of spring will justify, I break through the frost, and take the contents of a pit to my barn, and cover the roots with straw or hay. From thence they are fed to my stock, being first chopped up with a *snik*, (Dutch meat-chopper,) or spade. They are excellent for sheep, especially for ewes that have young, and hogs and horses eat them freely. Steamed, they are used in the north of England for horses as a substitute for grain. I have fattened sheep and bullocks upon them with profit. They constitute, particularly from February to June, an excellent culinary vegetable for the table. A bullock will thrive fast upon two bushels a day, and will consume hardly any hay, and requires no drink.

'*Produce and Cost.*—My average crop has been 600 bushels per acre, though others have raised much heavier products. The cost, in manure and labor, when they are secured for winter, has been from two to three cents per bushel.

'N. B.—Cattle or sheep, fattened upon this root, should be kept from eating them for eight or ten days before they are slaughtered, otherwise the meat will have an unpleasant savor.'

J. B.

ENGLISH TURNIPS.—Every farmer will find it profitable to raise a quantity of these roots. The Mangel Wurtzel and the Ruta Baga, useful as they undoubtedly are, will not completely supersede, nor altogether supply the place of the old fashioned English turnip. In the Memoirs of the Board of Agriculture of the State of New-York, vol. i, page 26, we find the following remarks on the best mode of cultivating this valuable root.

'There is no difficulty in raising turnips on new land; but it is very desirable to know the best mode of raising them, at least a small patch every year, on old farms. Mr. Henry De Bois, of this county, [Rensselaer,] and Maj. E. Cady, of Columbia county, say, that they have succeeded in obtaining good crops several years in succession by the following process. Turn over a turf of old sward the first week in June. Yard your cattle at night on this, in the proportion of six head at least to a quarter of an acre, until the 20th of July. Then harrow lengthwise the furrows, so as not to disturb or overturn them, and sow in the proportion of about half a pound of seed per acre.

'If it is not convenient to yard cattle upon it sufficiently, about two inches of well rotted manure harrowed in as above, will do as a substitute. Mr. C. R. Colden applies the manure by strewing it in shallow furrows two feet apart, then buries the manure by two side furrows, and harrows the ground level, lengthwise of the furrows. This method requires less manure, and he has the advantage of hoeing the turnips in drills.'

We recollect, likewise, that we have read in several of our New-England newspapers that fine turnips have been raised by plough-

ing up old sward ground, some time in June, harrowing well and sowing from the 1st to the 20th of July, and this without the application of manure. But there can be no doubt that folding sheep or horned cattle on the land thus ploughed would very much enhance the crop.

All American writers on this subject, whose works we have perused, advise to sow seed of the common English turnip as late as about the middle of July. They tell us that late sowed turnips are much the best for the table, and that they are less liable to be injured by insects, if sown so late, than when sown much earlier in the season.

Turnips are frequently if not most generally raised in the United States as a second crop, and no doubt this practice is often very eligible, and may be perfectly consonant with the soundest maxims of good husbandry. But when it is intended to *make the most of your crop of turnips*, or to obtain as great a product as possible for the purpose of feeding cattle, we do not perceive any objection to giving turnips a larger portion of the season to grow in, than has been with us the general practice.

An English writer on agriculture, whose remarks on this and other agricultural topics appear to us to be judicious, and to display a thorough knowledge of the subjects of his essays, says, 'It is not pretended that there lies any solid objections to early sowing of turnips, simply considered; on the contrary, such seems to be the most proper means of obtaining a full crop; but the advantages of early sowing, whatever they be, are given up; and the season postponed from near three to five months by way of retarding the growth of the crop; that it may last to a later period in the spring, and receive less damage from the frosts than that to which it would be liable in its early maturity. The disadvantages attending this plan are a crop far inferior in weight to what might be obtained from the land; the very common risk of destruction from drought and fly. The weight and perfection of the turnips, being the objects, the land may be got ready for them as for any other early spring crop, and the seed sown with the first warm showers. This will afford ample scope for re-sowing, should the first seed fail, of which, however, granting it to be good, and the land sufficiently fine, I believe there is scarcely any risk.'

'As to any advantages of a crop previous to the turnips, nothing scarcely can stand in competition with the first crop of roots.

'The true turnip-soil is a deep sand, or sandy loam. Every gardener knows the proper time to begin hoeing turnips. In general, when the plants spread a circle of about four inches they are ready for the first hoeing. They are commonly left about a foot asunder. The second hoeing three weeks after the first.'

Those who desire to go extensively and successfully into the turnip culture should raise their own seed from the finest transplanted roots. An English cultivator says, 'It is wonderful what a small quantity of seed suffices for an acre of ground, and indeed equally so how it can be delivered and spread over such a breadth. A pint might be more than enough, but it is usual to broad-cast a quart on an acre.'

Dr. Dean's New-England Farmer asserts that 'the quantity of seed sown on an acre is never less than one pound, frequently a pound and a half, and by some two. According to the same work, it is very necessary for the success of the crop that a heavy roller be passed over the field immediately after harrowing in the seed, provided the ground is sufficiently dry, or as soon as it is in a fit condition. By this means the clods are broken, and much of the seed that would otherwise be exposed to birds, &c., will be covered, and the surface rendered smooth and compact thereby, and consequently more retentive of moisture, which will greatly promote the vegetation of the seed and growth of the plants.

If a quantity of lime were sowed over the field immediately after putting in the seed, it would probably preserve the crop against insects, and prevent the turnips becoming spongy, as well as increase their size. Unleached ashes, soot, and plaster, have also been highly recommended as manure for turnips. Thomas Mellville, Jun. Esq. of Pittsfield, Mass., in raising a crop which received the premium from the Massachusetts Agricultural Society in 1817, and which amounted to about 750 bushels to the acre, sowed his seeds in drills of twenty-eight inches the 21st of June, on ground previously well manured. The following day sowed on the acre thirty bushels slacked lime and fifteen bushels house ashes.

What we have said about the *early* sowing of turnips we would merely suggest as a hint, or something to be thought of, and perhaps become a matter of experiment. It appears to us that our custom of sowing turnips so late in the season, as is commonly practised, is an usage borrowed from the British husbandry without duly considering the difference of our climate from that of Great Britain, and the different uses to which this crop is commonly applied in the two countries. In England they usually feed turnips off the ground with sheep; or draw them for neat cattle during the winter as fast as they are wanted, and often let them stand in the field till spring, to supply green food for sheep at the time of their yeaning, &c. But in the United States, this crop must be harvested in autumn and secured from frost; and it would seem to be desirable that they should have had time to obtain their full growth before they are gathered.

'Ellis, an old writer on husbandry, says, "Turnips sooted about 24 hours after they are up will be entirely secured from the fly." Some advise, and it may be well, if not too much trouble, to leach-soot and sprinkle the young turnips with the liquor. M'Mahon, in treating of the cultivation of turnips, says, "the plants should be left from seven to twelve inches every way; this must be regulated according to the strength of the land, the time of sowing, and the kind of turnips cultivated; strong ground and early sowing always producing the largest roots."

'The width of the hoe should be in proportion to the medium distance to be left between the plants, and this to their expected size.

'The critical time of the first hoeing is, when the plants, as they lie spread on the ground, are nearly the size of the palm of the hand; if, however, seed-weeds be numerous and luxuriant, they ought to be checked before the turnip-plants arrive at that size; lest being drawn up, tall and slender, they should acquire a weak and sickly habit.

'A second hoeing should be given when the leaves are grown to the height of eight or nine inches, in order to destroy weeds, loosen the earth, and finally to regulate the plants; a third, if found necessary, may be given at any subsequent period.

'Here will the farmer exclaim against the expense and trouble of hoeing; but let him try one acre in this way, and leave another of the same quality to nature, as is too frequently done, and he will find that the extra produce of the hoed acre will more than compensate for the labor bestowed.

'Loudon says *Arch. Garrie*, a Scottish gardener of merit, tried steeping the seed in sulphur, sowing soot, ashes, and sea-sand, along the drills, all without effect. At last he tried dusting the rows, when the plants were in the seed-leaf, with quick-lime, and found that effectual in preventing the depredations of the fly. "A bushel of quick-lime," he says, "is sufficient to dust over an acre of drilled turnips, and a boy may soon be taught to lay it on almost as fast as he could walk along the drills. If the seminal leaves are powdered in the slightest degree, it is sufficient; but should the rain wash the lime off before the turnips are in the rough leaf, it may be necessary to repeat the operation, if the fly begins to make its appearance."'

Harvesting.—It is asserted, as a general rule, that the proper time to reap wheat, or rye, is when the straw begins to shrink and become white about half an inch below the ear. This appearance is a sure indication that the grain has ceased to receive nourishment from the roots of the plant; and by cutting early, provided it is not taken to the barn or stack too green, the following advantages will be gained: First, the grain will make more and whiter flour. 2d. There will be less wasted by the grain's shelling. 3d. By commencing harvest early, you will have a fairer prospect of finishing before the last cuttings become too ripe, so that much of the grain will shell out in reaping and securing the crop. 4th. If you cut your grain as soon as it will answer, your straw and chaff will contain much more nourishment than if it were bleached and made brittle by the sun, air, dew, and rain, all of which combine to deprive it of most of its value for fodder. 5th. Should you plough in your stubble immediately after harvest, or mow it and secure it for fodder or litter, (either of which modes of management is perfectly consonant with the rules of good husbandry,) the stubble will make much better food for your cattle, or manure for your ground, than if it had yielded all its sweets, and much of its substance, to the greedy elements above mentioned.

If your wheat or rye is much affected by blight or rust, it should be cut even while still in the milk, and afterwards exposed to the sun and air, till the straw is sufficiently dry, and the grain so much hardened, that it will answer to deposit in the barn or stack. The heads, in such cases, should be so placed by the reapers as not to touch the ground. This may be done by laying the top ends of each handful on the lower end of the preceding one.

If your grain is encumbered with grass or weeds, you must cut it pretty near the top, in order to avoid as much as possible those extraneous substances. It will also be necessary to reap somewhat earlier than might be otherwise expedient, that you may have time to dry the weeds without danger of the grain's shelling out. If your grain is very

ripe when you harvest it, the bands should be made early in the morning while the straw is moist and pliable. And Dr. Deane recommended, in such cases, to bind the sheaves when the air begins to be damp towards evening, as the least degree of moisture will toughen the straw.

It has been recommended by several English writers to bind the wheat as well as rye with only one length of the straw. If the straw is pretty long, and not very thoroughly dry, this may be good economy. You save the trouble of making bands; your wheat will dry better in the sheaf, (as the sheaves must of course be small,) and though it may take some more time and trouble to pitch and handle it, we believe the advantages, in many cases, will turn the scale in favor of binding wheat with single lengths of straw.

In stowing wheat or rye, some persons deposit the sheaves on a mow of hay; but this is a bad plan, as the grain presses the hay so that it is apt to become musty, and communicate a musty or mouldy taint to the super-incumbent grain; which will be harder to thresh, than if it had a more dry and airy location. It may be placed on a scaffold of rails, laid on the beams, and over the floor of a barn; though it is not so easy to procure it for threshing, as if it were left on a scaffold of less elevation. But this disadvantage may be more than compensated by its being in a situation favorable for drying. If there is a deficiency of barn room, the sheaves may be stored in stacks. In that case, 'care should be taken that the grain may not draw moisture from the ground, by laying boards, straw, or rubbish, under the stack. A better way still is to have a tight floor of boards, mounted on four blocks set in the ground, and so high from the ground as to prevent the entering of vermin.

'In building a stack, care should be taken to keep the seed-ends of the sheaves in the middle, and a little higher than the outer ends. No fowls can then come at the grain; and the rain that falls on the outer ends will run off, and not pass towards the centre. The stack should be well topped with straw, that the rain may be completely turned off.'

Oats.—It is advised to harvest oats before the straw has wholly turned yellow. The straw will be of little value, if permitted to stand till it becomes white and destitute of sap. Though oats should be well dried on the ground after cutting, they should not be raked or handled when in the driest state. They should be gathered mornings and evenings, when the straw is made limber and pliable by the moisture of the air. If they are housed while a little damp, there will be no danger if they have been previously thoroughly dried.

Barley.—We are told by the wise men of agriculture, that some of the rules which should be observed in harvesting wheat, rye, nd oats, will not apply to barley. Willich's Domestic Encyclopedia states, that 'with respect to the time when barley is fit to be mowed, farmers frequently fall into the error of cutting it before it is perfectly ripe; thinking it will attain to perfect maturity if it lie in the swath. This, however, is a very common error, as it will shrivel in the field, and afterwards make but an indifferent malt; it also threshes with more difficulty, and is apt to be bruised under the flail. The only certain test of judging when it is fit to mow, must be from the dropping and falling of the ears, so as to double against the straw. In that state, and not before, it may be cut with all expedition, and carried in without danger to the mow.'

Dr. Dean's New-England Farmer states, that 'Some have got an opinion that barley should be harvested before it is quite ripe. Though the flour may be a little whiter, the grain shinks so much that the crop seems greatly diminished and wasted by early cutting. No grain, I think, requires more ripening than this; and it is not apt to scatter out when it is very ripe. It should be threshed soon after harvesting; and much beating, after it is cleared from the straw, is necessary in order to get off the beards. Let it lie a night or two in the dew, after it is cut, and the beards will come off the more easily.—[N. E. Farmer.]

Address delivered before the Horticultural Society of Maryland, at its Second Anniversary, May 15, 1834. By JOHN H. B. LATROBE.

We are sorry that our limits will not allow us to make more extracts than the following; to which, however, we invite the special attention of all those who wish to improve their knowledge of the truly beautiful in ornamental rural scenery.

"My present purpose," says Mr. Latrobe, "is with the garden, as a picture, for which nature has provided the coloring and the materials, and left man to make the disposition of them.

"He, who would excel in horticulture, as a means of producing agreeable effects, by the combination of choice, various and beautiful elements, should commence by studying nature as he finds her in the woods and in the fields. Within the narrow compass that ordinarily limits his labors, he cannot, it is true, hope to imitate the model thus proposed to him, in its forests, lakes, and mountains; but he should mark, nevertheless, the features of the landscape; should notice how the sun-light and the shadow alternate upon it, like smiles and frowns upon the face of woman in her loveliness; should observe the graceful form of every object around him, from the swelling hill and the winding stream, that lie in dim perspective, to the tiniest blade of grass at his feet, and thus improve his taste and collect his materials in the best of all schools for the horticulturist—that of nature herself. At every turn, he will find the advantage of such studies, and in all his work will the touch of the artist be perceptible; whether it be but a single geranium that requires his care, to pull its withered leaves, and direct aright its straggling branches, or, whether, upon the extended landscape, he attempts to combine the lawn and the wood, the lake and the waterfall, in the most striking forms of the picturesque and romantic.

"Two prints that I have seen of the same subject occur to me, as forcibly illustrating the idea which it is my purpose to convey.

"In the seventeenth century, an Italian artist was employed to exercise his imagination in painting the garden of Eden, to be engraved as an ornament to a poem. In the foreground he placed three beds, of the most approved form, for the culture of cabbages, occupied by a monkey, a fox, a leopard, two doves, a chicken, and a pair of rabbits; the whole bounded by a hedge, having an arbor in the middle of it, with a fountain tossing jets to the right and left, like the accommodating froth of the ever-spouting bottles of a cake-house sign. Beyond the hedge many boxgirt squares and circles, with a clipped cedar in the centre of each, surrounded the tree of life, bearing the fatal apple prominently displayed. This formed the middle ground of the landscape; and further still, a succession of eminences, with straggling bushes upon them, like remnants of a routed army, reached to the horizon. A clear sky, occupied by some half-dozen fowls of rather extraordinary dimensions, and a sun, with a broad merry face and ample rays, completed this rare conception of the blest abode on earth of the first parents of our race. The artist, no doubt, never looked from the window of his apartment even, while engaged at this work, but painted the pleasantest spot that he remembered, the formal and ill-arranged garden of the period, where he breathed the fresh air, and forgot for a while his pallet and its colors.

"In later days, an illustration of the garden of Eden was again required, and painting was once more brought to the assistance of poetry, in delineating a terrestrial Paradise. This time, however, the wild and vivid genius of Martin, whose pencil seems to possess the power of expressing the infinity of space and numbers, was employed to transfer to canvass the divine imaginings of Milton; to represent

'In narrow room, nature's whole wealth, nay more,
A heaven on earth.'

"While his Italian predecessor has sought his materials in the horticultural absurdities of his time, Martin resorted at once to the elements of the beautiful and grand, afforded by nature. In his picture, the remote mountain, invested with the warm coloring of a summer atmosphere, blends so harmoniously with the bright sky beyond, that its irregular, yet graceful outline, is just perceptible in the prolonged perspective. Vast forests extend along its base, until their ranges become more and more distinct, and a rich mass of varied foliage, basking in the yellow sunlight, forms a glorious garniture for 'the river which runs out of Eden to water the garden,' here spreading into a broad and placid lake,

'That to the fringed bank with myrtle crowned,
Her crystal mirror holds.'

"Here and there a tall palm tree, with its graceful leaves, waves over the inferior foliage, to break and diversify its gorgeous sameness, like the bending plume, which o'er the brow of beauty gives lightness, not less than dignity, to the charms below it. Still nearer, to the left, a long and shadowy vista leads upwards from the river banks, the cool quiet of whose unbroken solitude is placed in immediate contrast with the glitter and noise of the water-fall, which, after dashing and glancing, around rock and over precipice, is lost among the trees on the right of the picture. In the foreground stand the parents of mankind. Around them all is light and warmth. The foliage of the giant tree, that extends its yet unscathed branches above them, the grass under their feet, "damasked with flowers," all seem fresh and animate, as though the impulse of creation had yet scarcely ceased to operate visibly in their growth. Nature, in fine, furnished the elements for the picture of Martin, combined and connected by his exquisite skill into a scene of surpassing beauty."

Alphabet of Scientific Gardening for the Use of Beginners. By JAMES RENNIE, M. A., Professor of Zoology, King's College, London. 18mo. pp. 120, William Orr, London, 1833. [Continued from page 167.]

GARDEN PHYSIOLOGY.

It does not appear to me to be at all necessary for understanding the scientific principles of gardening, to go minutely into all the points respecting the interior structure of plants, and the functions attributed to the several tissues and vessels, inasmuch as those best skilled in such inquiries are by no means agreed upon many particulars. The attention will therefore be more usefully directed to the points which have been best ascertained and least disputed.

Rise of the Sap.—The fluids taken up from the soil by the spongelets at the tips of the root fibres, are carried up into the main root in a manner not yet well understood, whether it be by minute tubes, or by oozing among the cells, as water is diffused through blotting

paper or lump sugar. These fluids, as soon as they enter a plant, whatever may be the manner in which this is effected, take the name of sap, the rise of which into the stem is demonstrated by the ingenious experiment of watering with very thin colored fluids, some of which are taken up, though the ordinary sap is for the most part without color and transparent like water. The yellow juice of celandine and the milky juice of spurge are not sap.

In animals, the nutritive portion of the digested food which is taken up, as we have already seen, on the inner surface of the intestines, by the mouths of innumerable small tubes, is thence carried by the union of these into one (technically, *the Thoracic Duct,*) of considerable size, which conveys the whole into a vein, (technically, *the Subclavian Vein,*) where it is mixed with the blood. It is thence carried to the heart, by whose motion or beating it is thrown into a large vein, (technically, *the Pulmonary Vein,*) and carried to the lungs, where it is distributed into innumerable small tubes, and exposed through their very thin membranes to the fresh air taken in by breathing. Here the blood takes from the air a portion of its oxygen, and at the same time parts with a quantity of carbonic acid gas, which is carried off by the returning breath: hence, deteriorated by the loss of oxygen, and by having become loaded with carbonic acid. It is this deterioration which renders it indispensable for all animals to breathe fresh air, as confined air is soon rendered poisonous and becomes fatal. The blood thus freed from superabundant carbonic acid, and united with a portion of oxygen, is collected by innumerable minute arteries, which unite into one, (technically, *the Pulmonary Artery,*) and carry it back to the heart, to be thence distributed to every part of the body, for the purpose of supplying fresh materials for the growth or repair of the several parts.

These things I have stated more at length, in order to point out the very different processes that take place in plants, which have nothing like the animal heart to impel the sap into circulation, for the pith in the centre of trees, though popularly termed the *heart,* performs no such office.

Use of Leaves.—The leaves, however, have been proved, by numerous experiments, to be in some respects similar in their functions to the lungs of animals, though very unlike it considered as organs. The sap, for instance, is spread out in a leaf, into small portions, as is the blood in the animal lungs; and for the similar purpose of exposing it to the action of the air.

It is important to remark that the air acts on the blood in the animal lungs always in the dark, whereas in acting upon the leaves of plants, it is by turns in the dark, and by turns in the light—and the results under these two circumstances are very different.

In the dark, leaves, like the lungs of animals, take in oxygen from the air and part with a portion of the carbonic acid gas contained in the sap: from which it is evident, that they obtain a greater portion of this important material than is supplied by the water or the atmospheric air mixed with it, taken in by the roots from the soil.

It follows, that the air of a green-house, or any room or confined place where plants are kept, must be unwholesome during the night, from the air in such cases being deprived of its oxygen, and also loaded with carbonic acid gas. Consequently, flowers ought not to be kept at night in bed-rooms, through during sun-light they purify the air.

In the light, the sap which is spread over the upper surface of a leaf immediately under the thin, colorless, and transparent skin, (technically, *Cuticle*—in Latin, *Cuticula*—in Greek, Επιδερμις,) parts with a portion of its water in the form of vapor, and also with the oxygen contained in the carbonic acid gas, (which is composed of oxygen and carbon,) and as the oxygen goes off the carbon remains, while the sap, previously little less fluid than water, is converted into a sort of pulp (in Latin, *Cambium*, formerly *Parenchyma,*) a considerable proportion of which consists of carbon. The use of this pulp, as we shall see anon, is, like the animal blood, to supply fresh materials for the growth of the plant; and as the blood, after it has been acted on by the air in the lungs, passes from the veins to the arteries, so the pulp of plants passes from the upper to the under side of the leaf. The tubes or cells in which this pulp is lodged being of a yellow color, and the carbon, according to Sennebier, of a dark blue, produce between them the green color of the leaves and the younger bark, and hence the darkness of the green becomes a sort of test to determine the quantity of carbon separated from the sap, and also in some measure of tenderness and strength; plants being usually vigorous, hardy, and tough, in proportion to the darkness of their green. The term vigorous appears to be misapplied to plants of a pale color, which grow too large and become dropsical.

It is, at all events, certain, that blanched plants are tender; that bulbs placed so deep as to blanch a large portion of their leaves before reaching the surface, are too weak, as I have seen, to flower well; and that young leaves in the spring, before they acquire their full green, are readily injured by frosts and cold winds.

In accordance with these views, it may be stated, that plants are of darker green in Italy, where the sun is seldomer overclouded than in England; and though the grass has certainly a good color in "green Erin," it is not, I think, to be compared with the beautiful green meadows in the Canton of Berne in Switzerland, where the sun-light is more intense from the general elevation of the country. In American forests, when the young spring leaves appear, they sometimes continue pale yellow for several weeks, from the haziness of the sky; but no sooner does the haze clear away, and the sun shine out, than the green deepens almost visibly. "The color of the forest," says an eye-witness, "absolutely changed so fast, that we could perceive its progress: by the middle of the afternoon, the whole of these extensive forests, many miles in length, presented their usual summer dress."

It is a very curious fact connected with this subject, that, as it is on the upper surface of the leaf only, where the sap is changed into pulp by the action of air and light,—the leaf cannot be reversed, so as to place its upper surface undermost, and away from the direct light of the sky, without injury. When Bonnet accordingly placed leaves with their upper surfaces upon water, they withered almost as rapidly as in dry air.

Some practical gardeners, such as Lyon and Hayward, are disposed to question this circulation of the sap, but it has been proved beyond all doubt by experiment. Dr. Darwin plunged plants of spurge in water tinged red, and saw it rise through the leaf-stalk, and after being decomposed by the air and light, saw it return white from the edges of the leaf. T. A. Knight traced the returning pulp back into the leaf-stalk, and thence into the bark. He found also that if the leaves be stript from the upper part of a branch, the bark will wither as far as it is stript; and if a ring of the bark be cut out above and below a leaf, the wood in the part above the leaf does not grow.

It is therefore fair to conclude, that all the increase in growth arises from the leaves, that is, from the pulp prepared in the leaves by light and air, in the same way as all the increase in the growth of animals arises from the blood prepared in the lungs by the air, without light.

The doctrine held in some recent works of high pretensions, that the water given off by a plant is not produced "exclusively by the action of light and air," but "is *due,* (*due,* Anglo-French for owing,) to evaporation, or perspiration," which sometimes causes water equal in weight to that of the plant, to be perspired in twenty-four hours, is quite erroneous. It is altogether owing to light or air.

The high importance of the leaves becomes thus manifest, and nothing will more enfeeble a plant than taking off its leaves in the growing season; though they are no longer necessary during the cessation of growth in the winter. Their fall previous to winter is not caused by cold, for some trees drop their leaves while the weather is comparatively warm, but in consequence of the vessels at the root of the leaf-stalk becoming gradually rigid and obstructed, so as to prevent the rise of the sap, or, at least, the return of the pulp. When a branch is in any way killed during summer, its leaves do not fall, so that the killing of a leaf will not make it fall.

The slower growth of evergreens, and the difference of their pulp, as well as of the texture of their skin, renders their leaves less subject to a general fall, which takes place only partially and by degrees. It is probable, it is on account of the skin of the leaves becoming thicker and firmer from exposure to brighter sunshine, that our oak and other similar trees become evergreens in warm climates, as at St. Helena.

Descent of the Pulp.—That the pulp formed from the sap in the leaf passes back through the leaf-stalk into the bark, has just been proved: but the best inquirers are not agreed upon the manner in which it is afterwards distributed so as to nourish all parts of the plant. It is sufficient to know the unquestionable fact that it does so. A portion of it certainly passes down through the bark to the very root, where it in all probability throws out, as would appear from the experiments of Brugmans and Mirbel, such refuse materials as could not be used, and something of this kind may be seen adhering to the root fibres of hyacinths growing in water-glasses.

A portion of it, in its descent, must also pass off into the stem, probably by what may be termed pulp-cells, or by rays or plates, popularly termed the silver grain, (in Latin, *Radii,* or *Laminæ medullare.*) The pulp-cells have been supposed to be designed as reservoirs for spare nutrient matter, somewhat like the fat of animals, which is similarly stored up.

The doctrine now taught in books, and in universities, that every leaf-bud is a distinct plant, that a whole plant is only a collection of leaf-buds, that all the matter from which the growth of the parts is increased, descends from leaf-buds, that branches are only lengthened leaf-buds, and flowers with their stalks only *stunted* branches, crowned with *abortive* or *metamorphosed* leaves, appear to be altogether contrary to facts, and the result of wildly theoretical fancies, which ought to be expunged from rational science. It is what certain compilers call profound, while they stigmatise common sense and real science as superficial.

The simple fact, with respect to leaf-buds and branch-buds, seems to be, that they are expanded in spring by the sap, and when sufficiently so to permit the air and light to convert this into pulp, it descends into the bark at their base; but it is not till the leaf is fully expanded that any new wood is or can be formed, and, consequently, it is the leaf, and not the leaf-bud, which is the chief agent in the process. We might as well say, that a chick is the origin of the bones of its own mother, as that a leaf-bud is the origin of the newly-formed wood and the new branches.

The importance of correct views on this subject will be obvious, when it is recollected that grafting, as well as training, pruning, and striking from cuttings, depend for success upon this being well understood.

Seasons of Growth and its Cessation.—Too little attention has been paid in books of science to the different circumstances of plants,

during the several seasons of the year; and not a few errors have thence been the consequence. It is commonly stated, for example, that "the sap rises in spring and descends again in autumn," whereas we have seen that the sap does not descend at all, at least in the state of sap, and it is very clear that in proportion as the pulp-vessels in the leaf-stalks become obstructed with woody or carbonaceous matter towards the autumn, a circumstance indicated by the leaves becoming tinged with yellow, the quantity of descending pulp must be diminished, and the rise of the sap, from the same cause, must be interrupted.

The facts then, so far as at present ascertained, appear to be, that from this obstruction in the sap and pulp-vessels of the leaf-stalk, the sap rises in gradually diminished quantities, till at length, when the leaves fall, it almost ceases. I say "almost," for that it does not altogether cease to rise is proved by the buds and bark continuing alive and fresh, though they would infallibly wither and die, if the supply of sap, admitted to be very small, but indispensable to their healthy state, were cut off by removing the roots.

Certain animals which cease to eat on the setting in of winter, such as the squirrel, the bat, the snake, the frog, the snail, and numerous species of insects, continue to live in a sluggish and nearly motionless state, very different from sleep, in the circumstances, particularly, of the very slow and scarcely observable circulation of the blood, and of breathing, whose rapidity is not very greatly affected during ordinary sleep.

The terms *dormancy* and *dormant*, therefore, are inaccurate, when applied to this state, which is better designated by torpidity and torpid. Such animals are found previous to winter to become unusually fat, as indeed is the case, at this season, with most other animals, owing in part to the loss of substance becoming less, as perspiration diminishes with the increase of the cold.

Now plants, in winter, seem to be in circumstances very similar to those of torpid animals, the circulation of the sap, like that of the blood, and the changes effected by air and light, like the process of breathing, being scarcely, if at all, observable. With respect also to the increase of fat, it is said by T. A. Knight, De Candolle, and others, that a larger proportion than usual of nutrient pulp accumulates in the root, and in the pulp wood, (in Latin, *Alburnum.*) That this is the case with the buds of trees, with the bulbs of bulbous plants, and with the crown or life-knot (in Latin, *Corona* or *Torqua,*) of most perennial plants, and with the tubers of potatoes and dahlias, I think there can be no question.

In this state of torpidity, then, the greater number of plants continue during the winter; but the torpidity is more or less in degree according to the mildness or severity of the weather. I gathered a wild rose (*Rosa spinosissima*) fully blown, in Musselburgh Haugh, in Dec. 1818; and if the branch of a vine whose root is planted in the open air, be introduced in winter into a green-house, it will push out leaves, while the branches without remain torpid. That it does not derive its nourishment from the air of the green-house, was proved by De Candolle, who found that the roots of a vine thus forced into leaf exhausted the water of a bottle in which he placed them, while those of an adjacent vine, not thus forced into leaf, took up very little, if any, water from a bottle.

As animals, revived from their winter torpidity by unusually warm weather, are more apt to be injured by the recurrence of severe cold than if they had continued torpid, a circumstance but too frequently witnessed in the case of hive-bees, so plants prematurely roused from their natural winter torpidity by warmth, to expand their buds, are almost certain to suffer by it, should severe cold afterwards ensue.

It is important to remark here, that, like the leaves, the smaller root fibres shrivel and fall off, or become detached from the main root, a circumstance which has not hitherto received the attention which it well merits, both in a scientific and in a practical point of view. The fact is very obvious in the potato, the ranunculus and anemone, the dahlia, the carmyle (*Orobus tuberosus,*) and in all bulbs.

"The soil," says De Candolle, "is warmer than the air at mid-winter," (being always about eight degrees above freezing;) "this warmth rouses into life the trunks and roots then full of the nutrient pulp collected in the preceding summer: while, from this cause, new root fibres shoot out towards the end of winter. These, having all the freshness and activity of youth, display their energy by pumping up the moisture from the soil. The awakening of vegetation then arises from two causes,—the activity of the new root fibres, which push the sap they have taken in onwards from behind; and the activity of the bark which draws it upwards. When it arrives at the leaf-buds it causes them to expand; but acts first on those at the summit of the branches, either because it can rise more easily in a perpendicular direction, or rather because the wood and bark of the upper branches is younger, and therefore more energetic."

That these are not the only causes, is proved by plants often expanding their buds in spring, when the cold is greater than in autumn, and bulbs and the tubers of the potato cannot be kept from shooting except in considerable cold. It may therefore be inferred that plants are endowed with, or acquire periodical tendencies, in the same way as we ourselves go to sleep and waken again at the periods to which we have become accustomed. This is farther proved by plants taken to climates differing from those where they have been produced. English apple trees, for example, when first taken to Canada, bloomed much too early, and had all their blossoms nipt with the spring frosts, till, after being inured to the climate, they learned to bloom later; which our almond trees in England, brought from the warm banks of the Jordan, have never yet sufficiently learned, and hence those fine trees, whose spring blossoms are so delightful, are rarely fruitful.

It is worth remarking, that when the buds of a plant have been once awakened into expansion, and new root fibres have begun to form, they will go on even at a lower heat than would have served to rouse them at first, as was experimentally proved by Mirbel and Chevreul.

It is evident from the preceding facts and inferences, that the strength which a plant will show in the spring, and consequently its successful growth in the succeeding summer, will depend much on the store of nutrient matter which it has been able to prepare and store up, in the buds, the pulp-wood, the root, and more particularly in the crown of the root: an important consideration in pruning and forcing, as well as in most of the processes of gardening.

The History of Arabia, Ancient and Modern. By ANDREW CRICHTON. With Engravings and a Map; Harper & Brothers, New-York, 1834. Vols. 2, pages 418 and 422. [Continued from page 171.]

THE ARTS.—"Their mathematical and mechanical knowledge the Arabs turn to various purposes of multiplying and improving the conveniences of life—such as the construction of aqueducts, baths, cisterns, and canals. Their acquaintance with hydraulics is manifested from the number of mills and other water-works employed in the useful process of irrigation. Accustomed to an arid and sultry climate, they considered the command of water to be a material requisite in every country where they settled. The *pontanos* or reservoirs in Spain, and the tanks in Africa, were either erected or restored by them. Their palaces and mosques were furnished with capacious cisterns. The gardens of the Alhambra contained sheets of water, in the surface of which the buildings were reflected; and in most of the principal cities fountains played in the streets as well as in the courts of the houses, by which the atmosphere was attempered during summer. In the famous palace of Toledo was a pond, in the midst of which rose a vaulted room of stained glass adorned with gold. In this apartment the caliph could enter untouched by the water, and sit while a cascade poured from above, with tapers burning before him. We are not aware that any discoveries of theirs in hydrostatics have been transmitted to us; but the titles of two works by the celebrated Alkendi are mentioned in Casiri, namely, on Bodies that Float on Water, and on Bodies that Sink.

"Architecture was an art in which the Arabs particularly excelled; and the revenues of kingdoms were expended in erecting public buildings, of which Jerusalem, Babylon, and Baalbec, afforded the most stupendous models. It has been observed as a circumstance worthy of remark, that no people ever constructed so many edifices as the Arabs, who extracted fewer materials from the quarry. From the Tigris to the Orontes, from the Nile to the Guadalquiver, the buildings of the first settlers were raised from the wreck of cities, castles, and fortresses, which they had destroyed.

"In the style of architecture, the Arabs, both of the east and the west, had a kindred resemblance, as appears by contrasting the disposition of the apartments of the Alhambra, and other remains of Moorish art, with the accounts given by travellers relative to the general mode of oriental buildings. While little attention comparatively was bestowed on the exterior of their mansions, on the furniture and accommodation within every thing was lavished that could promote luxurious ease and personal comfort. Their rooms were so contrived that no reverberation of sound was heard. The light was generally admitted in such a manner as, by excluding external prospects, to confine the admiration of the spectator chiefly to the ornaments and beauties of the interior. Their arrangements for ventilation were admirable; and by means of caleducts, or tubes of baked earth, warm air was admitted so as to preserve a uniform temperature. The utmost labor and skill were expended in embellishing the walls and ceilings. Their tiles had a blue glazing over them; their paving bricks were made of different colors—blue, white, black, or yellow—which, when properly contrasted, had a very agreeable effect. Nothing is more astonishing than the durability of the Moorish edifices. The stucco composition on their walls became hard as stone; and even in the present century, specimens are found without a crack or a flaw on their whole surface. Their wood-work also, which is of a more fragile nature, still remains in a state of wonderful preservation. The floors and ceilings of the Alhambra have withstood the neglect and dilapidation of nearly 700 years; the pine wood continues perfectly sound, without exhibiting the slightest mark of dry-rot,

worm, or insect. The coat of white paint retains its color so bright and rich, that it may be mistaken for mother of pearl."

"It is unquestionable that a great number of the inventions which at the present day add to the comforts of life, and without which literature and the arts could never have flourished, are due to the Arabs. They taught us the use of the pendulum in the measurement of time; and also of the telegraph, though not with all the speed and effect of modern improvement. The manufacture of silk and cotton was brought by them into Spain, as was probably the art of dying black with indigo. They introduced the use of camels and carrier pigeons into Sicily. The art of enamelling steel, the system of a national police, the principles of taxation, and the benefits of public libraries, were all derived from the same source. Rhyme, a pleasing characteristic of modern verse, though some have assigned to it a Gothic origin, was doubtless borrowed from the Saracens by the troubadours and Provençal bards, who derived from the same source the sentiment of honor, the mysticism of love, and the spirit of chivalry, so copiously infused into our early romances. Even Descartes, as Huet has asserted, was indebted to them for his celebrated metaphysical principle, *Cogito, ergo sum*. To them also belongs the honor of making us acquainted with the manufacture and use of paper. This invaluable commodity, it is true, had from a very remote period been made in China from the refuse of silk, bamboo, and other substances. About the year 649 the invention was introduced at Samarcand by the Tartars, who used cotton instead of silk; and when that flourishing city was subdued by the Moslems, the process was conveyed to Mecca, by Yussuf Amru (A. D. 706), where paper was made similar to that now manufactured, though it does not appear to have come immediately into general use. From Mecca the art spread through all the Arabian dominions. In Spain, which was renowned for this article from the 12th century downwards, flax, which grew there abundantly, was substituted for cotton, the latter being scarce and dear. Alphonso X. established paper-mills, and his example passed successively into France, Germany, and England.

"Gunpowder, the discovery of which is generally attributed to Schwartz, a German chemist, was known to the Arabs at least a century before any traces of it appear in European history. Though it is probable they may have derived their knowledge of this composition from the Indians, they certainly improved its preparation, and found out different ways of employing it in war. The mariner's compass has been alternately given to the Italians and the French; but Tiraboschi, notwithstanding his partiality for his country, is decidedly of opinion that the honor of its invention is due to the Arabs. Its adoption in Europe is not older than the 13th century, while among the Arabs it was known in the eleventh. The polarity of the magnet is alleged to have been known to Aristotle; and something like the compass was in use among the Chinese; but as the Saracens paid considerable attention to navigation, and often undertook long and laborious voyages, history has with much probability assigned to them the discovery of the magnetic needle."

At Muscat, near the entrance of the Persian Gulf, "the water is good; the fruit of the best quality,—grapes, mangoes, peaches, plantains, figs, pomegranates, limes, melons, and dates. Nowhere is there greater variety of fish; in the bay they swarm like gnats in a summer evening; the rocks supply oysters and other shell-fish, all of which are sold at a very cheap rate. As the pasturage is scanty in this neighborhood, dried fish a little salted, and pounded date stones, form the chief articles of food for their cattle, of which they are very fond. Horses and sheep, as well as cows, are fed on this diet.

"Lands are commonly let on lease, or for an annual rent, usually payable in produce. Slaves are here, as in all other parts of Arabia, employed in agricultural labor; but they are treated with uniform kindness and indulgence. Oman is by no means celebrated for its manufactures. Turbans and waistbands, or girdles of cotton and silk, striped or checked with blue; cloaks, cotton, canvas, gunpowder, and arms of inferior quality; earthen jars, called *murtuban*, for the Zanguebar market,—comprise almost all their fabrics. They also prepare an esteemed sweetmeat, named *hulwah*, from honey or sugar, with the gluten of wheat, and ghee, and a few almonds.

"The price of live stock at Muscat is extremely various. Camels, according to their blood and quality, will bring from thirty to three hundred dollars apiece; goats from four to six; sheep from one and a half to six; mules are not reared, neither are horses abundant; but the asses of Oman are celebrated as the finest in Arabia. The price of the common kind varies from one to forty dollars; but the best breeds sell for very extravagant sums."

Pigeons.—"One species of inviolable property belonging to the mosque are the flocks of wild pigeons with which Mecca abounds, and which nobody dares venture to kill. Several small stone basins are regularly filled with water for their use; and as it is considered an act of piety to feed them, there are women who expose corn and dhourra for sale on small straw-mats, and who occasionally embrace the opportunity of intriguing with the pilgrims, under the pretence of selling them corn for the sacred pigeons."

Liquors.—"The law prohibiting wine is evaded, so as to become almost a dead letter. Intoxicating liquors are sold at the very gates of the temple; neither the sanctity of the place nor the solemn injunctions of the Koran can deter them from indulging in all the excesses which are the usual consequences of drunkenness. The Indian fleet imports large quantities of *raki* in barrels, and when mixed with sugar and an extract of cinnamon, it is sold under the name of cinnamon-water. The rich merchants, ulemas, and grandees, are in the habit of drinking this liquor, which they persuade themselves is neither wine nor brandy, and therefore not prohibited by the law. The less wealthy inhabitants, who cannot purchase so dear a commodity, use a fermented liquor made of raisins, while the lower classes drink *bouza*. Tobacco, hashish, and other intoxicating substances, are openly smoked, and cards played in almost every coffee-house."

Food.—"The hardy and athletic frame of the Bedouins, or inhabitants of the desert, is to be ascribed in part to their abstemious habits. They are models of sobriety, and never indulge in luxuries, except on some festive occasion, or on the arrival of a stranger. Their usual articles of food are rice, pulse, dates, milk, butter, and flour. The common people eat bread made of dhourra, which is coarse and insipid. When they have no grid-iron, they roll the dough into balls and cook it among embers. They generally eat their bread while hot and only half baked."

Crops.—"There is a great diversity of soil in Arabia. Travellers have remarked a very great difference with regard to the comparative increase of certain crops, and the productive powers of the soil. In Oman, according to Niebuhr, wheat yields ten to one; while in the best cultivated lands of Yemen, it gives a return of fifty fold. In the vicinity of Bussora and Bagdad, the increase seldom exceeds twenty to one; at Mosul, it varies from ten to fifteen; and in Diarbekir, the ordinary wheat crop produces from four to fifteen fold. In the Hauran, this grain yields in middling years twenty-five, and in good seasons one hundred and twenty fold; while barley gives fifty, and in some instances eighty fold. But the corn of those districts which are watered solely from the clouds is of better quality, and produces more flour than what is grown on fields irrigated by artificial means; hence a return of fifteen in Syria is reckoned more than equivalent to twenty fold in Mesopotamia. A government tax of ten per cent. on all grain is levied in Nejed; but where the labor of irrigation is required, this impost is reduced one half, in consideration of the additional expense. Of all kinds of grain, dhourra is the most productive. On the hills of Yemen it gives a return of one hundred and forty; and in Tehama, where the inhabitants reap three successive crops from the same field in the same year, this increase varies from two hundred to four hundred: an exuberance that appears almost incredible, but which is chiefly owing to their mode of sowing, and their industrious irrigation. As this grain forms the staple article of food, not only in Arabia, but in other eastern countries, its extraordinary fertility must be regarded as one of those benevolent arrangements of Providence, whose economy is adapted with such exquisite wisdom to the wants and circumstances of man in all climates, and in every region of the earth."

Vegetables.—"The Arabs cultivate several pot-herbs that are common in our gardens, such as carrots, turnips, beans, onions, leeks, garlic, asparagus, beet, spinach, lettuce, a very delicate purslain, with sharp leaves, a sort of radish, of which the leaves only are eaten, water-cresses, besides an immense variety of gourds, cucumbers, pumpkins, and melons; of the two latter, there is a sort that grows wild in the woods, and serves for feeding camels. The proper melons are reared in the fields, and in such abundance that the natives of all ranks use them for some part of the year as their chief article of food. When nearly ripe, the fruit is pierced into the pulp; this aperture is then stopped with wax, and the melon left upon the stalk. By means of this simple process, the pulp in a few days is converted into a delicious liquor."

"There are certain plants used for purposes of domestic economy, while others are universally esteemed for their medicinal qualities. A mean looking herb, like orache, is mentioned by Forskal, and ranked by him as a distinct genus, by the name of *Suæda*, which affords abundance of an alkaline salt, excellent for whitening linen, and employed instead of soap by the common people. Burckhardt states, that the Bedouins of Wady Genne, near Sinai, use for the same purpose the herb *ajrem*, which they dry and pound between two stones."

Fruit Trees.—"Most of the fruit trees reared in the gardens and hot-houses of Europe are indigenous to Arabia. The apple, pear, peach, apricot, almond, quince, citron, pomegranate, lemon, orange, olive, mulberry, and filberts, are to be met with in the wadis and irrigated plains, from the borders of the Dead Sea to the Euphrates and the shores of Oman.* The Arabs likewise eat the fruit of several common shrubs, such as *Asclepias* and the *Rhamnus*; but they have a species of pear, and a cornel, peculiar to themselves. From common oranges, cut through the middle while green, dried in the air, and steeped forty days in oil, they prepare an essence famous among old women for restoring a fresh black color to gray hairs."†

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* Burckhardt doubts whether apples or pears grow in Arabia (Travels, p. 367); but he seems to have forgotten that he mentions them elsewhere among the fruits in the garden of the convent at Mount Sinai. Niebuhr speaks of them as common in Yemen, tome iii. 130.

† From the name *Portughan*, given to the orange both in Arabia and Italy, travellers and naturalists have supposed that it was brought into Europe by the Portuguese. This is a mistake. The orange was cultivated by the Arabs in Sicily and Spain many centuries before the Portuguese visited the East.

GUM ARABIC.—"According to Burckhardt, this substance is the produce of the talh, which he calls the guna arabic tree. In describing Wady Lahyane, between Akaba and Gaza, he says that the Bedouins feed their camels upon the thorny branches of this shrub, of which they are extremely fond. In summer they collect the gum, which they sell at Cairo for about 12s. or 15s. per cwt. The taste he represents as insipid, but he was assured it was very nutritive. Of this latter fact Hasselquist mentions a striking confirmation, in the case of an Abyssinian caravan crossing the African desert to Cairo, in 1750. Finding their provisions consumed while they had yet sixty days to travel, they had recourse to gum arabic, of which they carried a considerable quantity with them; and upon this alone 1000 persons subsisted for two months."

DOMESTIC ANIMALS.—"The Arabs rear in abundance all the domestic animals common to hot countries. They breed horses, mules, asses, camels, dromedaries, cows, buffaloes, hogs, sheep, and goats.* Their cows and oxen are distinguished by a hump or bunch of fat on the shoulder, immediately above the forelegs. Those in Hejaz are described by Burckhardt as small, but of a stout bony make; they have for the most part only short stumps of horns, and bear a strong resemblance to those he had seen on the banks of the Nile, in Nubia. Of the instinct ascribed to these animals, of forming into circular bodies to defend themselves against beasts of prey, Niebuhr could obtain no information, nor did he think the story probable. Buffaloes are found in all marshy parts of the country and on the banks of the rivers, where they are more numerous than the common horned cattle. The male is as fit for the yoke as the ox: his flesh is inferior, being hard and unsavory; but when young, it has much the taste and appearance of beef. The female yields more milk than the ordinary cow. The Arabs have a mode of forcing her to yield more than she would do voluntarily: while one person milks, another tickles her, a custom which the ancient Scythians practised with their mares.

"An Arabian horse offered for sale is usually provided with his title of nobility. The pedigree is often put into a small piece of leather, covered with waxen cloth, and suspended round the animal's neck. Burckhardt has given one of these curious documents, which he translated from the original in the handwriting of the Bedouins. It is as follows:

'God.

'Enoch.

"'In the name of the most merciful God, the Lord of all creatures, peace and prayers be with our Lord Mohammed and his family and his followers until the day of judgment; and peace be with all those who read this writing and understand its meaning.

"'The present deed relates to the grayish-brown colt, with four white feet and a white mark on the forehead, of the true breed of *Saklawye*, called *Obeyan*, whose skin is as bright and unsullied as milk, resembling those horses of which the Prophet said, 'True riches are a noble and pure breed of horses;' and of which God said, 'The war-horses, those which rushed on the enemy with full blowing nostrils, —those which plunge into the battle early in the morning.' And God spoke the truth in his incomparable book. This Saklawye gray colt was bought by Khoshrun, the son of Emheyt, of the tribe of Zebas, an Aeneze Arab. The sire of this colt is the excellent bay horse called *Merdjan*, of the breed of Koheylan; its dam is the famous white Saklawye mare, known by the name of *Djeroua*. According to what we have seen, we attest here, upon our hopes of felicity and upon our girdles, O Sheiks of Wisdom and Possessors of Horses! this gray colt above mentioned is more noble even than his sire and dam. And this we attest, according to our best knowledge, by this valid and perfect deed. Thanks be to God, the Lord of all creatures!—Written on the 16th of Saphar, in the year 1223 (A. D. 1808). Witness,' &c.

"'This purity of blood and descent the Bedouins are extremely careful to preserve uncontaminated. During twenty days, at a certain season, the mare must be watched to secure her from the approaches of any common horse, which she is not allowed to see, even at a distance; for the Arabs are believers in the effects of imaginations on the progeny of their cattle. When the foal is produced, the same witnesses must be present, and within seven days a notarial certificate of its legitimacy is made out, in which is written an account of the colt's distinctive marks, with the names of its sire and dam. These genealogical tables, called *Hujeh*, never ascend to the grandams, because it is understood that every Arab of the tribe knows by tradition the purity of the whole breed. Nor are such testimonials at all necessary in the interior of the desert, where many horses are of such illustrious descent that thousands can attest their nobility. A Bedouin would laugh at being asked by an inhabitant of Nejed for the pedigree of his mare; written evidence he never thinks of producing, except when attending distant markets, such as Bussora, Bagdad, Damascus, Aleppo, Medina, or Mecca. A colt, at the moment of birth, is never allowed to drop upon the ground; they receive it in their arms, and so cherish it for several hours, washing and stretching its tender limbs, and caressing it as they would a babe. After this they place it on its legs, and watch its feeble steps with particular attention, prognosticating from that time its future excellencies or defects. The ears are tied together over its head with a string, that they may assume a fine pointed direction; the tail is pressed upwards, and other measures taken at the same time, in order that it may be carried high. The only care taken of the dam is to wrap a piece of linen cloth round her body, which is removed next day. At the end of a month the foal is weaned, and for the space of a hundred days thereafter it is permitted no other food than camel's milk. When that period has elapsed it receives a daily portion of wheat diluted with water. A handful only is given at first; by degrees this quantity is increased; although milk still continues to be its principal food. This diet continues a hundred days more; and when this second period has expired, it is allowed to eat grass, and is fed on barley; receiving every evening, along with that provender, a bucket of camel's milk, should the tent happen to be well supplied with it. The Nejed Arab gives his colts neither barley nor wheat, but nourishes them with a paste of dates and water; and sometimes to a favorite he will give the fragments or leavings of his own meals. In that province, horses are regularly fed upon dates; at Deraiah and in El Hassa, the dates are mixed with *birsim*, or dried clover. The wealthier classes often give them flesh, raw as well as boiled; and sometimes, before the commencement of a long journey, they get roasted meat, that they may be the better able to endure fatigue. A native of Hamah told Burckhardt, that in order to prevent a favorite horse from falling into the hands of the governor of that town, he fed it for a fortnight exclusively on roast pork, which excited its metal to such a degree that it became absolutely unmanageable, and could no longer be an object of desire to the avaricious functionary. In Egypt, vicious horses are cured of the habit of biting by having a leg of mutton presented to them newly taken from the fire: the pain which the animal feels in seizing the hot meat with its teeth teaches it in a few lessons more gentleness of temper. The Arab steed, like its master, is accustomed to the inclemency of all weathers. During the whole year they are kept in the open air, being seldom taken into a tent even in the rainy season. The Bedouins never rub or clean their horses; but take care to walk them gently whenever they return after a ride. They generally rest in a standing position, and have been known to remain on their legs for years in succession without lying down. Yet with so little attention to health, they are seldom ill. The most prevalent diseases are the gripes, farcy, warbles, surfeit, jaundice, strangles, mange, broken wind, and watery swellings upon the stomach. Burning is the most general remedy. To cure the strangles they rub the tumors with a paste made of barley, chaff, and butter; at the same time the smoke of a linen rag dried with indigo is inhaled up the animal's nostrils, which occasions a copious discharge. In cases of surfeit they bleed the horse's feet, and wrap the skin of a sheep newly killed round its body.

"In general they do not allow their mares to breed until they have completed their fifth year; but the poorer classes sometimes wait no longer than the fourth, as they are eager for the profits arising from the sale of the foal. The colts are usually ridden after the completion of the second year; and from the time they are first mounted, the saddle is but rarely taken off their backs. In winter a coarse sackcloth is thrown over them, and in summer they stand exposed to the mid-day sun. Their saddles are of wood, covered with Spanish leather; but they have no pommels, instead of which they make use of stitched felt. The stirrups are very short, with flat square bottoms and sharp pointed corners, which answer the purpose of spurs; the slightest touch makes the animal fly like the wind, while the rider bears himself upon the stirrups that he may use his lance with greater vigor. The Nejed Bedouins have no other saddles than a stuffed sheep-skin; they all ride without stirrups or bridles, guiding the horse merely with a halter. This is nowise surprising when the extreme docility of the animal is considered,—without vice of any kind,—and more the friend and companion than the slave of his master. When not employed in war or travelling, they loiter about the tents, often going over heaps of children lying on the ground, and carefully picking their steps lest they should hurt them. They allow themselves to be kissed and toyed with, or hugged round the neck, without doing the least injury. The different colors of Arabian horses are clear bay (*ahmar*), brown bay (*adhem*), sorrel (*ashekwar*), white (*abiad*), pure gray (*azrek*), mottled gray (*raktha*), bluish gray (*akhdar*), black (*udhem*), and dark chesnut (*ulmar mukruk*): black and light bays (*aswad* and *ashehab*) are unknown in Arabia, and only found in Persia, Tartary, and Turkey.

"In general these animals are of a middle size, of a slender delicate shape, light and active, rather lean than fat, but of surprising swiftness, and accustomed to the fatigue of long marches. They have small ears, little belly, and a short scanty tail. They are almost invariably free from apparent deformities, and so gentle that women or children may manage them. The physical qualities which the Arabs prize most in this animal are the following: Neck long and arched,—head small,—ears tapering and almost meeting at the points,—eyes large and full of fire,—lower jaw thin,—muzzle bare,—wide nostrils,—belly not too broad,—sinewy legs,—pasterns short and flexible,—hoofs hard and ample,—chest broad,—rump high and rounded. Whenever the three beauties of head, neck, and rump, are found combined, the horse is considered as perfect. There are several particular marks or natural signs which the Arabs regard as sinister and unfavorable; while others are esteemed the reverse, and capable of producing

* Strabo must have been misinformed when he excepted mules, horses, and hogs; as also geese and hens. "In Arabia pecorum, omnis generis copia, exceptis mulis, equis et porcis; avium etiam omnium præter anseres et gallinas." —Lib xvi.

happiness to the owner. They reckon about twenty evil indications; but the only bad effect they have on the animal is that of depreciating its value by two thirds or more. The Persian and Turkoman horses, whose figures are much alike, differ from the Arabian in this, that they are more corpulent, and their coat is not so soft to the touch. It is, moreover, an opinion pretty generally received in the East, that the latter are especially distinguished from the others by the repugnance they evince towards clear water; while that which is turbid pleases them to such a degree that they never fail to prance about in any that happens to come in their way. The price of Arabian horses is variable, and often depends much on the caprice of the buyer and seller: in Syria, it fluctuates from 10 to £120. A good mare can scarcely be obtained under £60; and even at that price it is difficult to purchase one, as the Bedouins always prefer the females to the males for riding, because they are not accustomed to neigh, and thus expose them in their ambuscades to the risk of detection. For a celebrated mare a sheik has been known to pay £200; sometimes the price has amounted to £500, and even to £800. The favorite mare of Saoud, named *Koraye*, which he constantly rode on his expeditions, was purchased from a Kahtan Bedouin for 1500 Spanish dollars. Kinneir states that £1200 was refused for one at Aleppo. At Bussora, where they form an important article of trade, the average price is about 300 rupees, though the cost is thrice, or even five times as much at Bombay or Calcutta. Over all Arabia, as also in Egypt and Syria, horses are possessed by several owners in partnership; each is divided into a number of shares (*kerat*), of which several may be purchased by a single individual."

NEW-YORK FARMER.

JULY 1, 1834.

Agricultural Fair for the County of New York.—The Committee appointed by the New York County Agricultural Society, to procure a suitable place for the Fair, on the fourth Thursday (23d) of October next, have obtained a very eligible one within a few miles of the city.

The object of this Fair is for the sale and exhibition of all kinds of live stock, farming implements, machinery, and products. The Society, fortunately, having little or no funds, is under the necessity to commence on that plan which will make the Fairs permanent, and of great benefit to the community—that is, have them purposely and principally to accommodate farmers and breeders in purchasing and selling stock, and every thing connected with farming operations. Premiums for superiority in the animals, and articles exhibited, although calculated to promote the interest and elevate the condition of agriculture, are viewed as secondary to the establishment of a Fair that shall be rendered permanent by the interest and business of the Agricultural community. The Society will therefore first give its whole attention to the attainment of this object.

Persons throughout the country who take an interest in this subject are earnestly requested to exert their influence in promoting the objects of the Society.

On a future occasion more particulars will be given.

Printers will confer a favor on the Society, and render a service to agriculture, by giving publicity to this notice.

Charles Henry Hall,
Samuel Fleet.

New-York, June, 1834.

Crops and Weather.—In this vicinity rain has fallen, more or less, almost every day; and a considerable part of the month has been unusually cool; but a few days, however, have been very hot. Grass promises abundantly. Corn is not forward, but in other respects it is not unpromising. Other kinds of grain are by no means discouraging in prospect. Strawberries, gooseberries, currants, and cherries, have been plentiful in market.

Crops in Kentucky.—The Lexington Gazette, of May 25, says, about the crops in that State: "The severity of the Spring has been disastrous to crops, in a greater or less degree in all the Western States. In Kentucky, particularly, it has been ruinous. Scarcely half crops will be made in any portion of the State we have seen. We have recently passed through Woodford, Anderson, Shelby, and Spencer, and it has been alike fatal there."

A Nashville paper, of May 29, says:

"We are gratified to learn from the Truth Teller that the prospect of the cotton crops in the western district is by no means as gloomy as was at first anticipated. In other sections of the State also, particularly in Giles county, and portions of Lincoln, Bedford, and Maury, parts of Rutherford, Davidson and Williamson, &c., the effects of the late frosts, though severe, have been in a great measure obviated by re-planting, where it was necessary—though in many fields that process was unnecessary. Should the season continue favorable, there is reason to hope that the cotton crop of the State will be sufficient to meet the exigencies of the community."

The Ohio Farmer, published at Batavia, says, under date of June 1st:

"Mr. Nelson Jenkins, of Clinton county, Ohio, in a letter to us, dated the 17th of May, says:

'The frost has destroyed the prospects of my vineyard for this year, and I fear it has hurt the vine. On the morning of the 27th of April, the thermometer fell to 25½°, and on the morning of the 14th May it fell to 28°.'

In March, we set about 300 cuttings of the Muscatel and Isabella grape. They were putting out finely when the cold set in—all the young shoots were killed, and it does not now appear that more than one out of every ten will recover."

Mr. Goodsell, in his Genesee Farmer of June 12, makes these observations:

During our visit to the north-east part of this county, last week, we were happy to find that some of the apple orchards had so escaped the effects of the frosts of last month, as to give fair promise of a crop of fruit. Although peaches may be said to be generally destroyed in this country, yet we discovered a few scattering ones upon the trees near the Lake.

Wheat looks remarkably well, and is already beginning to show the ears.

Indian corn backward, but the prospect is for a crop.

Grass looks well, and some pieces of the small species of clover nearly ready for cutting.

Early sown oats and peas look fine.

The Savannah Georgian, of June 10, contains the following:

Yesterday we experienced one of those intensely hot days which so often, with us, characterize the month of June. Not a breath of wind was stirring, and the rays of the sun were reflected from the sand in an overpowering manner. The thermometer in our News Room, which is one of the coolest situations on the Bay, ranged as high as 94 degrees.

Corn has reached an enormous price with us. On Saturday there was none in market. On Sunday a cargo of 2,500 bushels arrived, which has, we understand, been retailed at $1 25 per bushel.

Yesterday morning there were *Peaches* in market, the *second* time this season, we understand, that this fruit has been there. They, and some Apples with them, might have been advertised, as Colonel Stone, of the Commercial, does his Tales, *such as they are*.

A late paper from Peoria, Illinois, says: "We are informed by the farmers in our vicinity, that the crops have every appearance of being productive. We have had, during the last few days, a succession of warm showers—the fields of small grain never looked better."

As far as we can learn, crops generally throughout the country have not been injured to that extent imagined, but on the contrary promise abundantly. We have just returned from a visit on Long Island, where we found the farmers not regretting the past, but hoping for showers less frequent.

Rare Seeds.—We acknowledge the receipt of a few seeds of the Florida sago plant, and perennial pea, from Dr. Kennedy, who has recently returned from exploring Southern Florida.

Also, from Samuel Stephens, Esq., some beans, recommended for their good quality and peculiar growth. They were originally sent from a Horticultural Society in Europe to J. M. Ely, Esq.

From a friend, a few Brazilian pumpkin seeds. The pumpkins were brought out this spring. We ate of the pie in June. All of the first two kinds of seeds we have distributed to subscribers of the Farmer. A few of the last two remain for distribution at 81 Barclay street.

Perennial Rye Grass.—The best field of this grass that we know as growing in this vicinity is at the milk dairy of Mr. J. Montgomery, on the Bloomingdale road. He was cutting it very early in June, then yielding a very heavy swarth. He uses it for soiling his cows, for which he highly recommends it. The only objection he has against it for hay, is, that it is apt to fall and lodge; but for soiling and pasture, he considers it to have few or no superiors. Mr. M. is one of those who have excellent pasture, and an airy situation, for his cows, and is able in consequence to supply the citizens with milk both rich and wholesome.

Watering Isabella Grape Vines.—Some years past a gentleman recommended, at a meeting of the New-York Horticultural Society, plentiful watering of the native grapes just as they begin to change their color after obtaining a full size. Mr. Aymar, of this city, has tried it for two or three years. He cuts a trench near the stem, and keeps it well supplied with water, principally from the wash of the kitchen. Mr. A. says it improves the flavor of the grapes, and makes them more melting, like the foreign.

The Locusts, in Forsyth county, Georgia, have appeared in appalling swarms, on which, it is stated, the swine have fattened.

To remove a Hard Coating or Crust from Glass and Porcelain Vessels.—It often happens that glass vessels, used as pots for flowers and other purposes, receive an unsightly deposit or crust, hard to be removed by scouring or rubbing. The best method to take it off is to wash it with a little diluted muriatic acid. This acts upon it and loosens it very speedily.

SALT FOR CATTLE.—A very industrious and respectable milkman told us, the other day, that *two thousand dollars* would not make up the losses he incurred in eight or ten years past, from the sickness and death of his cows. He now intends to raise his cows instead of buying them, supposing they will be less liable to diseases than those he purchases. If he will adopt the following plan, which we take from the Genesee Farmer, we will insure his loss not to be the tenth part of the above sum in the next ten years.

"I have had constructed some heavy plank troughs, 12 or 15 feet long, and fastened on to heavy wooden blocks to prevent being upset, for the use of the cattle. In these a coating of tar has been poured over the bottom, and sulphur and alum sprinkled on; then a considerable quantity of salt, so that the cattle can lick it up at their pleasure. Cattle will never eat more salt than they want, and the other articles serve as preventives to the disease. Many people only salt their cattle occasionally. But this is apt to be neglected, and cattle get altogether too little, and cannot be kept perfectly healthy without *enough* of it. It also seems to keep them about home, and attaches them to the yard, and makes them docile, affectionate, and easy to manage. All domestic animals have good feelings and dispositions if kindly treated, and much of the sullenness and vice in which they sometimes indulge arises from bad treatment in the first instance by their keepers. These matters should be well taken into account by every farmer and breeder of stock. Not only humanity, but economy and good thrift, requires it." ULMUS.

SILK MANUFACTURE AND MORUS MULTICAULIS.—About the year 1824, M. Perottet, a distinguished travelling botanist, introduced this valuable plant into France. He procured two specimens at Manilla, the capital of the Phillipine Isles, and carried them to the Isle of Bourbon, and from thence into Cayenne and France. Now there are millions in Europe, Asia, and America growing from those two plants; and in a few years, there will be additional millions. From an article in the New-England Farmer, by Wm. Kenrick, we extract the following:

The sudden and extraordinary extension of the silk manufactures, both in France and in England, during the last ten years, has been mainly ascribed to the machine invented in France by M. Jacquard; and the powerful impulse thus given has been assigned to the *Jacquard Loom*. This loom is stated to perform all those labors which had heretofore been exclusively confined to the most skilful hands, with important economy of time and labor in the preliminary steps, and is so decidedly superior to all other looms, for all the curious varieties of figure-silk weaving, that it has superseded them all, both throughout France and England.

Those resources, the millions we now annually expend for silks, the productions of foreign industry, and of foreign policy, draining our country of its treasures — those vast sums should be preserved to our citizens. This industry and resource of wealth must not be compromised nor bartered, nor sacrificed to rival and particular interests, or to the interests of rival nations. The cultivation of silk being in no wise exclusive, but a great and general interest, alike adapted to every region of our country, from the north to the extreme south; from the Atlantic to our territories which are bounded on the Pacific ocean—it demands that equal share of protection which has been bestowed on cotton, on iron, on tobacco, and on the productions of the sugar cane. But the encouragement of the cultivation of the Mulberry, and of the growth of silk, *in the United States, as a resource of Agriculture*, seems not to have formed any part whatever of what is called the "The American System."

The enterprise, the fertile invention, the noble efforts of individual exertion, have already accomplished much, but the field is very broad and of vast extent; much yet remains to be done. That industry which still slumbers: that portion, which unawakened is now lost, being alone more than sufficient to accomplish all, if once aroused and rightly directed—more than sufficient to recover again those very considerable sums, the millions so prodigally expended, with interest an hundred fold.

By those unceasing toils and mighty efforts, and matchless labors, for which our people are so distinguished, the millions thus recovered will not only be their just reward, but will add to the substantial wealth of the nation, and to the glory of the whole Republic.

* * * * *

In our own country there may yet perhaps be some who would advance the question whether this most desirable plant will endure the winters of northern climates. At New-York, on Long Island, this mulberry has sustained, unprotected, the rigors of seven winters, as I am informed, and the extraordinary winter of 1831-2, which destroyed so many trees hitherto deemed hardy even to the root.

I have indeed sanguine expectations, that the *Morus Multicaulis* may prove as hardy in our climate, as the peach tree, which was originally from Persia, or the cherry tree, when once their roots have become established. Its vegetation being rapid and luxuriant, and prolonged to a later period in autumn than that of most other trees, or till the tender and yet vegetating tips of the twigs are checked by the frost, these extreme ends will generally be lost, as they always are of the common White Mulberry when young.

In our climate, there are many kinds of trees which need protection during the first winter, though they may never require any afterwards. Such are the young seedling plants of but a single summer's growth, of the *Cherry*, *Plum*, *Pear*, the *Quince*, and the *White Mulberry*, &c. all which require to be carefully, compactly placed in cellars; during winter, their roots buried in soil; or occasionally, for protection, may be laid in out of doors compactly and in a slanting position, their bodies being in part protected by soil. For all these species are liable to be killed occasionally to the root by the first winter, or to be utterly destroyed by being thrown out by frost, yet in the second winter it is far otherwise; their roots becoming strong and firmly established, the well ripened wood of the second year, and the wood of two years growth becomes indestructible by any but very extraordinary winters. I have taken the same precautionary measures with the young and tender plants of this Mulberry, so valuable—the layers of but a single summer's growth, which are separated in autumn.

I will offer some further evidence of the hardihood of this plant. But the experiments which are now in progress elsewhere, as well as here, on a more extensive scale, will, as I trust, soon enable us to put this subject more fully at rest.

Very late in the spring of 1833, more than an hundred young trees of the Morus Multicaulis were set out on the place of S. V. S. Wilder, Esq. in Bolton, Worcester county. The soil springy, the exposition cold, and sloping to the north; Mr. Joseph Breck, a distinguished botanist of Lancaster, the town adjoining, having especial charge of these plants, has lately very critically examined them. Thus unfavorably situated, and unprotected, they have borne the last winter without injury, except only the very tips of the twigs. Mr. Breck is persuaded that they are even hardier than the common White Mulberry, since some hundred of the latter, which stood very near, were killed half way down to the ground by this same winter.

I have just received a letter, of the 30th ult., from John Gordon, Esq. a public spirited gentleman, who has, during the last year, made trial of the *Morus Multicaulis*, at Hampstead, N. H. These plants grew well during the summer and have borne well the winter, and are now luxuriantly vegetating to within two or three inches of the tips. Mr. Gordon is now making trial of the White Mulberry, and the *Morus Multicaulis*, in the city of Portland, in exposed situations, also of the silk worm, confident they will all succeed well, and that the culture of silk will answer well in that climate.

Although the Mulberry flourishes most luxuriantly in a moist and rich soil, and protected situation, yet the leaves in such soils and situations are more crude, and not of a quality so nourishing. Besides, the growth of the tree in such situations being much more rapid, the wood is consequently more tender and more liable in northern climates to be killed by winter; and authors seem to be agreed, that the proper soils for the Mulberry tree are dry sandy, or stony; and trees on dry, light soils, and situated on the open plains, and on hills the most exposed to cold winds, will generally be found to suffer least of all from the effects of winter. Such appears to have been the case in 1831-2; the ravages of that destructive winter seem to have been generally confined to trees growing in particular situations and soils. Even delicate trees and plants, the natives of more southern climes, become more hardy, and capable of supporting the northern winters. by being planted on the north side of buildings and fences, and in their shade. The exposure to the most intense degree of cold, in such situations, is more than compensated by the protection which is thus afforded to the plants during winter, from the pernicious and far more destructive rays of the sun.

The prediction, in 1830, of the late Dr. Felix Pascalis, that, "after the discovery of *this plant*, a doubt no longer exists, that two crops of silk may be produced in a single season;" this prediction has since been fulfilled—its truth confirmed by experiment—the soil and cultivation, the habitations for the successive generations of insects being yet the same: all thus converted to a double use, and the whole production doubled. It must be obvious, that the actual profit thus augmented must be manifold.

Newton, June 7th 1834.

BOSTON FARM SCHOOL AND ASYLUM.—We are gratified to learn that the Boston Asylum for Indigent Boys has been united with the Farm School. A farm, removed from temptation has been secured on Thompson's Island, at a short distance from the city; and buildings are soon to be erected to receive the pupils.—[Annals of Education.]

MILK SICKNESS—A DEPOPULATED VILLAGE.—The following is an extract of a letter from a correspondent of the New-York American, dated at St. Louis.

A few miles below Alton, on the Mississippi, I passed a deserted village, the whole population of which had been destroyed by the "Milk Sickness." The hamlet consisted of a couple of mills and a number of farm houses, not one of which was now tenanted; but the dried weeds of last year choked the threshold of the latter, and the raceways of the mill were encumbered with timber, while the green slime of two summers hung heavy on their motionless wheels. Not an object but ourselves moved through the silent town, and the very crows themselves seemed to make a circuit around the fatal place, when they came in view of the thickly sown burial ground on the skirt of the deserted village.

ANALYSIS OF THE CUCUMBER.—The cucumber has been found to contain, on analysis, no less than 582.80 parts of water in 600; the remaining 17.20 parts consist of 13 different ingredients, in different proportions, the principal of which are a fungous matter similar to the mushroom, and a sweet substance, which gives to this fruit its peculiar flavor.

THE COILING SYSTEM OF CULTIVATING GRAPE VINES IN POTS.—At page 164, we inserted an article on this interesting system. We subjoin some additional facts from the Gardener's Magazine.

This coiling system is certainly a completely new feature, and, I think, a very valuable one, in the art of grape-growing. Is it not a matter of great importance that, in consequence of my discovery, a gardener, who may go to a situation, in the autumn, where no grapes have previously been growing, may be enabled to produce there easily, for the ensuing season, from 500 to 1000 bunches of fine grapes? All that is wanting to enable any gardener, so circumstanced, to do this, are the prunings of the vines from any garden, that would otherwise be thrown away, and, of course, a convenient frame, pit, or house, for growing them in. If abundance of shoots can be produced, and there is a sufficient extent of frames, &c., either temporary or permanent, two, three, or five thousand bunches may thus be produced in a garden where grapes were never seen before.

The coiling system is nothing more than taking a long shoot or cutting from a vine, cutting out all the buds except a few at the upper end, and then beginning at the lower end, and coiling the shoot round and round, say from three to six or eight times, the inside of a pot of 12 or 14 inches or more in diameter. The shoot may be of any length, from 6 feet to 30 feet, and it may be entirely of last year's wood; or the greater part of it may be of old wood, provided 3 or 4 feet at the upper end be of new wood; because, as every gardener knows, the buds from young wood are more certain than those from old wood of producing blossoms the first year. The vine being coiled round in the pot, and plenty of drainage being put in the bottom, take care that the end of the shoot left out of the pot, on which the fruit is to grow, be not injured at the point where it separates from the coil. This shoot may be 2 or 3 feet long; and to keep it steady, it may be tied to a stake, or coiled round two or three stakes. After this, fill up the pot with a rich loamy soil, pressing it firmly against the coil, as if you were making firm the end of a cutting. Unless this is done in such a manner as to bring every part of the coil in close contact with the soil, it will not root so readily as it otherwise would do. The next operation is, to wrap up all that part of the stem which is above the pot with moss, and this moss must be kept constantly moist till the grapes are formed. The pot should now be plunged in bottom heat, either in a pit or forcing-house; but, wherever it is plunged, care must be taken to regulate the temperature of the atmosphere of the house, in such a manner as to prevent the top of the vine from being excited before the roots. If this should happen, the young shoots produced will soon wither for want of nourishment. Abundance of air, therefore, should be given for several weeks, so as never to allow the temperature of the atmosphere of the house, frame, or pit, to exceed 45 or 50 degrees, while the temperature of the medium in which the pots are plunged may be as high as 65 or 70 degrees. When, by examination, you find that fibres are protruded from the coil, the temperature of the atmosphere may then be gradually raised, when the buds will break, and the shoots will grow apace.

The shoots proceeding from that part of the stem above the pot should be led up to within 8 or 10 inches of the glass, and there trained, at that distance from it, towards the back of the pit or house, It is needless to state to the practical gardener, that each shoot will require to be shortened, free from laterals, &c. Each vine will produce from three to twenty or more bunches, according to the length of coil and variety of grape. I have now (Jan. 17, 1834,) upwards of 200 coiled branches in pots, and nearly fifty of them in action; some with t wenty bunches of fine grapes upon them.

I was asked the other day, whether vines so treated would not require frequent shiftings into larger pots; or, at least, to be shifted once a year. To this I answered, that while we had a plentiful supply of prunings from our own vines, or could procure them from those of our friends, the best mode would be to treat the plants, after they had borne one crop, as we do the roots of asparagus, and other plants that we force: that is, to throw them away. If, however, you should wish to keep the coiled plants a second year, and the pots should be found to be too full of roots, turn out the ball, shake the soil from the coil, and cut away all the roots close to the shoot; then repot it as before. If this be done in winter, the plant will produce an excellent crop the following season; probably a better one than if the roots were allowed to remain, and the ball shifted into a larger pot or box. The pot or box is in either case soon filled with young vigorous fibres, like a hatch of young maggots, each eager for food, and consequently sending it up in abundance to supply the crop above. Can there be a doubt but that this is a far superior mode to keeping pots, or even fruit tree borders, filled up with old inert roots?

Before my bunches are clearly developed, I have thousands of eager mouths or spongioles, extending along the coiled shoot, and each gaping for food; some of these rootlets are 3 feet long, and before the vines are out of blossom, many of them are 6 feet in length, and matted round and round the pot. You will easily understand from this how important it is to supply vines so treated with liquid manure, either by watering from above, or by a supply from a saucer or feeder from below.

I am, Sir, yours, &c.
JOHN MEARNS.

Wilbeck Gardens, Jan. 17, 1834.

OHIO COMPANY FOR IMPORTING CATTLE.—Our correspondent F. E. R. has sent us the subjoined article, taken from the Chillicothe Advertiser. We are pleased to record exertions so spirited and liberal to improve our stock of cattle. It is very probable, too, that the Improved Short Horns will be suitable for the fertile and rich lands of the West. For this section of the country, and for all New-England, we are persuaded it will not answer to invest capital in this breed at high prices.

The following is an extract of a letter from Felix Renick, Esq., to his brother in this place, dated "Liverpool, (England,) 30th April, 1834.

"I returned to this place the day before yesterday, after a pretty thorough examination of all the best stocks of short horned cattle in Yorkshire and Durham, and have been considerably disappointed in finding so few of the best kind of cattle; their stocks have evidently been "going back," as they call it here, for several years, in consequence of a depression in price, &c.

"We have purchased fourteen head of the best cattle we could find, and have had to pay very high for them, as I think it is entirely useless to import any but the best kind, with an indisputable pedigree, and they are scarce and dear. We have paid various prices, according to their quality and purity of blood, which is much looked to here, and they are valued accordingly. We have paid from 30 to 150 guineas for those which we have purchased. The cattle purchased by us, in our opinion, (as well as that of all the best judges that we have seen,) are superior to any in England, with the exception of one.

"Some of the cattle purchased by us took the premiums at the Otley Agricultural Fair. We are now so far advanced with our purchases as to be ready for shipping at any time, and my object in returning here was to procure vessels to take them out.

"I parted with Josiah Renick and Edwin J. Harness a few days ago, at Leeds. They proceeded to London and Paris. They will probably return through Herefordshire, and look at some of the Hereford Reds, as they are called, and some of the Devons; but from any thing I have seen, and all the information I can get, I do not believe it will be right to import any other than Short Horns, or Durhams, as we call them. The best cattle here are all known as the improved breed of Short Horns; and as it respects the Long Horns, that were formerly so much admired by us, I do not believe there is any stock of that kind in England; there are still some bred in Ireland, and purchased in England, to bring up some of their short horned calves, for they never let them suck their dams, but either raise them by hand or by nurses. The long horns have dwindled comparatively to nothing.

"I am happy and thankful to inform you that we are all in good health since leaving Liverpool, and going to the North, which is a high healthy country."

ART OF MANAGING SHEEP.—Sir: I have been very desirous of ascertaining the particular method in which Mr. Barney, of Philadelphia, manages his sheep, that enables him so far to exceed every body else in producing fine mutton, and good wool.

On his late visit to this city, I put the question to him, wherein consisted his superior management of sheep? He gave the following reply: He said a gentleman visited him not long since, and on going to his sheep-yard, and viewing it, asked him the same question. He showed at that time, from fifty ewes, upwards of sixty lambs, all lively and brisk, with a loss, I think he said, of three or four. The gentleman observed to him that he had his shed covered with dead lambs; and asked wherein the secret in breeding lay. Mr. Barney observed to him, you stuff your sheep with dry food. Yes, as much good clover hay as they will eat, was the reply. Mr. B.—You give them no water, but suffer them to go out in time of snow and eat it as they are disposed to do? Yes. Then, said Mr. Barney, there lies the secret. Your sheep fill themselves with dry hay; they get no water; and they have not a sufficient supply of gastric juice to promote the digestion of the hay in the stomach; they cannot raise it *to chew the cud;* they lose their appetite; are thrown into a fever; and cannot bring forth their young, or they bring forth a feeble, starved lamb, that falls off and dies the first exposure to the cold or rain. On the contrary, I take care to provide my sheep with good clear water in summer and winter. I feed them regularly with hay through the winter, and give them ruta baga and mangel wurtzel every day. The ewes produce me 120 per cent. increase in lambs. You cannot, says Mr. Barney, get along without ruta baga and mangel wurtzel.

This gentleman has just sold his sheep for upwards of $17 per head to the butchers. It is his opinion that sheep are the most profitable stock that a man can raise; and it appears he makes use of no expensive food, or increased quantity of it. But the secret of raising good stock of every kind consists in maintaining that regular and cleanly mode of proceeding, which preserves the digestive organs of the animal in a healthy state, and enables them to convert what they eat into chyle, suitable for the nourishment of the animal. Respectfully yours, A.—[Farmer and Gardener.]

ANTS.—Mr. Goodsell: I have been much troubled in my garden with ants. Will you or some of your correspondents inform me of the best method of destroying, or at least driving them from my premises. LIVINGSTON.

Note.—The most ready method of destroying nests of ants, which we have practised, is to dig the earth, and throw it, ants, and soil, into a wheel-barrow, and carry it to some distance from their former habitation, and filling the excavation with fresh earth. By digging and removing the earth as deep as the ants penetrate, their nests are entirely broken up, and their *Ant-i* republican principles subdued.

IMPROVED LIVE STOCK.—Some friend has forwarded to us the Quebec Mercury, of May 24th, requesting an insertion of the following, with which we cheerfully comply.

A paragraph lately appeared in this paper stating that the Lower Canada Society for the Promotion of Agriculture had received answers to certain queries proposed by them, on matters connected with cattle, to the Right Hon. Sir John Sinclair, Bart.; Wm. Aiton, Esq.; Charles Gordon, Esq., Secretary to the Highland Society; and Wm. Hamilton, Esq. Secretary to the Botanical and Horticultural Society of Plymouth. We have been favored with the answers of these gentlemen for publication; they are given below, and will be found to convey much useful information, communicated with a readiness and in a manner to afford ample proof of the ability and willingness of these distinguished characters to promote the extension of agricultural knowledge, by every assistance they can render.

Sir John Sinclair and Mr. Aiton accompanied their answers with copies of their respective works on agriculture, which are of great value; and Mr. Hamilton rendered his letter doubly acceptable by conveying, at the same time, a further supply of the Victoria or Caraccas Wheat. The communications of these gentlemen follow:

Answers to queries put by the Agricultural Society of Lower Canada, at Quebec, to the Right Hon. Sir John Sinclair, Bart.:

Query 1.—What, in your opinion, is the most celebrated breed of milch cows in Great Britain?

Answer.—The improved dairy cows in the western counties of Scotland are certainly now the most celebrated and valuable breed of milch cows in Britain, or any other part of Europe. Such is the opinion of one who has carefully inspected all the different breeds of cattle in Scotland, in many of the counties of England, as well as on the continent, from Paris to the Texel. The cows in Cheshire are not of a uniform breed, but a mixture of those in the neighboring counties, and of Scotch and Irish breeds, all crossed and blended together. And as they are not so well fed and treated as the dairy stock in Scotland, they are inferior to them in general character, and in milking. The Durham or Teeswater breed are superior as dairy cows to any other breed in England; and if they were as well fed and treated as the Scots dairy stock, they would equal them in beauty and good qualities. The cattle in Holland have often been mentioned as excellent dairy cows, but from the quality of their pasture, and the way they are fed in winter, the Dutch cows have strong bones, coarse shapes, and do not yield so much milk, in proportion to their size, as the dairy cows in the western counties of Scotland. For the history, shapes, and qualities of that breed, the Society are humbly referred to the account of the Dutch Dairy Cattle and Husbandry, in the tour through that country, sent with these answers.

Query 2.—What quantity of milk would a cow of such a breed give per day?

Answer.—There is such diversity in the quantity of milk, that some cows yield more than others of the same breed, and still more in what every cow will give under various changes of circumstances; that it is not easy to fix the proper average of the returns of any breed. Cows sprung from the same parents, and reared and fed together, will often vary considerably in the quantity of milk they yield. Cows give less milk when young, or when they are too old, than they do from four to eight years of their age. Cows that are lean give less milk, and that of an inferior quality, than the same cows will give when they are in a good habit of body. Cows generally give more milk for two or three months after calving than they do afterwards. And the manner in which they are fed and treated has a powerful effect on the milking of cows.

But without going into particulars, or mentioning extraordinary returns that some cows have made, it may be stated, with entire confidence, that the fair average of the annual returns of milk, given by thousands of the best of the Ayrshire dairy cows, when they are in good condition and well fed, and when they drop their calves about the end of the month of April, will be nearly as under.

First 50 days,	12 Scots pints per day			600
Second 50 days,	10 pints or 20 quarts			500
Third	do.	7 pints per day		350
Fourth	do.	4 do.	do.	200
Fifth	do.	4 do.	do.	200
Sixth	do.	3 do.	do.	150
				2,000

Some of these cows give still greater returns, and very many that are of inferior sizes, or worse fed, do not give nearly so much milk as stated above. But the society may depend upon the fact, that all the proper dairy cows, when in good plight, and well supplied with proper food, will, in general, yield 2,000 Scots pints, or 4,000 quarts of milk every year. And it is equally certain, that 14 or 15 quarts of that milk will generally yield 22 or 23 ounces of butter; and that from 55 to 60 pints, (110 or 120 quarts,) of that milk, with its cream, will yield twenty-four pounds avoirdupois of full milk cheese.

Query 3.—What would be the price of a cow of such a breed from two to three years old, and in calf?

Answer.—The prices of milch cows vary so much from diversity of circumstances, that it is not easy to fix the price for any length of time. The scarcity of fodder from a very dry summer—the failure of pasture herbage from the same cause, or from the weather being cold and stormy in the months of May and June, which frequently happens in the changable climate of Scotland, will sometimes lower the price of milch cows, ten, twenty, or thirty per cent. while a more favorable season will raise prices considerably. These cattle are twenty or thirty per cent. cheaper in harvest than they are in May or June. The crops having been abundant, and the summers fine for three years past, the prices of milch cows are considerably higher than they have been for several years before. Some milch cows of the best sort, and in good condition, have been sold as high as £25; but young cows, from two to three years old, and in calf, may be procured of the best sort, at from £10 to £12 each, or still cheaper.

Query 4.—What would be the price of a bull of the same breed, from eighteen months to two years old?

Answer.—Bulls also vary much in price. Some of the best dairy bulls have been sold as high as from £150 to £200: while one of an ordinary description may frequently be procured for £9 or £12. It would be proper to select a bull for Canada about two years old, as the best looking calves frequently alter so much in their shapes and character before they come to maturity, as to render it unsafe to trust to what they may turn out until they are two years old. The dairy bulls, that have most of a feminine aspect, are preferred to those that are more masculine. A dairy bull of good shape and qualities may be procured for about £14 or £16.

Query 5.—What is the most celebrated breed of cows in Great Britain, or elsewhere, for the production of butter?

Answer.—The quantity of butter yielded by cows depends more on the food given them, than on any peculiarity of the breed of cattle; and the quality of the butter is greatly influenced by the mode of feeding, and still more by the manner in which the butter is manufactured. Cows that browze on natural pasture, or what is called old turf, do not yield so much milk as the same cows would give when fed on clover, turnips, cabbages, and new herbage, but the milk of the former is of better quality, and yields more and richer butter, from any given quantity of milk, than that of cows fed on clover, &c. Some individual cows of every breed give richer milk, and of course more butter in proportion to their milk, than other cows of the same breed, and when reared and fed in the same manner. Milk, as it comes from the cows, consists of oily matter, from which butter is made, *lactic* matter, which forms cheese, and *serium*, or whey: and the milk of particular cows of every breed differs considerably in the proportions it contains of these respective substances. But it is doubtful if any particular breed can be pointed out which uniformly yield more butter than any of the other breeds, except in so far as they yield more milk, or are influenced by climate, the mode of feeding, &c. Much butter, and that of a superior quality, is made in Holland, and particularly in the Province of Freiseland. This seems to proceed from the cattle being fed on meadows where the herbage is of natural growth, and very rich. The cows in Holland give less milk in proportion to their size than the generality of the Scots dairy cows; but the milk of the Dutch cows is richer than the other. In Holland the milk is not allowed to stand more than from 18 to 24 hours, to cast up cream, while in Scotland it stands double those periods. The consequence is, that nothing but the richest and best cream, which always rises first, is made into butter in Holland; while in Scotland, the inferior cream, which makes inferior butter, is collected and churned with the other. And above all things, the great attention paid to cleanliness in Holland has a powerful effect on the quality of their butter.

Query 6.—What quantity of butter would a cow of such breed produce per week?

Answer.—From what has been already stated as to the diversity of the quality and quantity of milk, the society will readily perceive that it is not easy to answer this query on general principles. A cow, kept by William Cramp, of Lewis, in the county of Sussex, is mentioned in the fifth and sixth volumes of the communications to the Board of Agriculture, as having yielded in the year 1805 540 pounds avoirdupois of butter. In 1806, this cow gave 450 pounds of butter, in 1807 she gave 675 pounds, and in 1808 the same cow gave 466 pounds, avoirdupois, of butter. The Secretary to the Board of Agriculture mentioned a cow kept by the Rev. Mr. Heckett, of Beckingham, near Newark, that yielded nineteen pounds, avoirdupois, of butter in one week. But he added, that six, seven, or eight pounds per week, were the common returns of the cows in that part of England. Mr. Vancouver states, in his report of Hampshire, that a cow of an inferior size, kept by Anthony Grave, Symington, yielded from fifteen to sixteen pounds, avoirdupois, of butter, per week, for some part of the season. A cow of the Ayrshire dairy breed, kept by Mr. White, on lands in Lanarkshire, situated in 800 feet of altitude above the level of the sea, yielded for several weeks, in summer 1833, sixteen pounds, avoirdupois, of butter per week. And the Rev. Mr. Alpin, of Skarling, obtained at the rate of thirteen pounds of butter from one of his cows that year per week.

But although many such instances of produce could be pointed out, they are far above the ordinary or medium returns of dairy cows. It is certain, however, that thousands of the Scots dairy cows yield 4,000 quarts of milk in the course of one year, as has been mentioned; and it is equally certain that sixteen quarts of that milk uniformly yield, on an average, 24 ounces of butter, so that the average return of these cows, when of good quality, in right condition, and properly fed, is 375 pounds, avoirdupois, of butter, per cow, per annum.

Much more might be stated on these subjects, but the Treatise on the Scots Dairy, herewith sent, and the account given in the tour, also sent, will show the state of that branch of industry, and every thing respecting the cattle both in Scotland and in Holland. If the society order cattle to be sent to Quebec, they will be selected from the best dairy stocks in the county of Ayr, and several of the most intelligent and most respectable farmers, who

are members of the Kilmarnock Farmers' Society, will cheerfully assist the person the Canada Society may entrust to purchase the cattle.

The best time for sending out the cattle would be in the spring, to reach Quebec so soon as the river St. Lawrence is open. If sent in autumn, the cattle would not be so well prepared to be confined and fed on hay, as they would be about the beginning of March; and it would be better that they did not reach Canada till nearly the time that they could be put on grass, to revive them after their voyage. Care would in that case be taken, that none of them were to drop their calves till a month or two after they reached Quebec. The sooner, however, that the society come to a determination on these points, and instruct the person they employ on this side the Atlantic, so much the better.

As to the expense of freight, from the best information yet obtained, it would be charged at the rate of £ or so, for each cow or bull, and £ for each horse or mare; including the expense of hay, corn, &c. But this matter can be better inquired into, either by the society, or the person they employ in Scotland, before the cattle are sent out; and no advantage taken. Greenock is certainly the best port for shipping the cattle, unless it might happen that a ship was to sail from the Troon.

If the cattle were to be put on rich pasture in Canada, the largest and best of the breed might be taken out. But if the pasture there is inferior to good pasture in Scotland, it would be proper to select cattle of somewhat inferior size: for it is injurious to cattle, and particularly to dairy stock, to be put on pasture inferior to that on which they have been reared; while, on the other hand, small cattle will soon rise to all the size that the mode of feeding can support. The society can easily find in Quebec some people who can inform them if the pasture there is inferior or better than that in the county of Ayr. Hugh Caldwell, surgeon in Quebec, can give that information. The smaller cows would be of the same breed as the largest, but taken from poorer land.

On Horses.—Query 1. What breed is best adapted for farmers?

Answer.—The Lanarkshire or Scottish breed is certainly superior to all others, for either plough or cart. This breed of horses is better described in an appendix to the Dairy Husbandry of Scotland, herewith sent, than it can be in any further answer to this query.

Query 2.—What would be the price of a stallion and mare of such breed, from three to four years old?

Answer.—Stallions of the breed referred to have been sold as high as from £100 to £250. But one every way sufficient for the society's purposes might be obtained for about £80, or under £100. As such a stallion would be put to many of the native mares of Canada, it would be proper he should suit that purpose. If these mares are small and poor, it would be bad economy to put a large stallion to them; and if they are as large as those in the arable districts of Scotland, the stallion should be about their size. In breeding farm stocks, the male should be of good shapes, and of a proper breed, but by no means larger than the female to which he is put.

The price of a young breeding mare of the Lanarkshire breed, and of the best size and quality, could not be less than from £30 to £40. But if the pasture and mode of feeding is not nearly equal to what is bestowed on horses in Scotland, it would be proper to send out a mare or two of rather inferior size; but of the general breed of the Lanarkshire or Scots race of farm horses. William Aiton.

Answers by Charles Gordon, Esq., to the questions above answered:

To question 1.—I cannot pretend to say what is the best breed of milch cows in Great Britain. In Scotland it is generally considered that the pure Ayrshire stock, as to be found in the counties of Ayr and Lanark, are fully as good, if not better, than any others we are acquainted with, when the *combined qualities* of good milchers and feeders are taken into the estimate. I understand a very great number of young stock of this breed are annually purchased for British dairies.

2.—A cow of that breed will give, when in good keeping, 12 Scots pints (imperial) of milk per day.

3.—A two year old cow, (or *Quey*, as at that age they are called here,) in calf, may at present be had for about £10—a bull at that age, promising good qualities, perhaps £15 or £20.

4 & 5.—A cow of that breed will produce the average quantity of about eight imperial lbs. of butter, many of them more, per week.

7 & 8.—Of the three breeds of sheep mentioned, South Down, Leicester, and Lincolnshire, which is known in this country as the improved Leicester, are most profitable when brought into the *richer* districts of Scotland, the only districts adapted for them. It has become a common, and, I understand, a profitable practice to cross the Cheviot ewe and Leicester ram; there is obtained thereby a greater produce of novel and of more valuable quality in the market,—and a greater size in the animal. The society are of course aware that the Cheviot and Blackfaced breeds of sheep are entirely reared in the pastoral and mountainous districts of Scotland. The former the more valuable for their wool; the latter the more hardy, and at a proper age the most delicate mutton we are acquainted with.

9.—I believe it generally allowed that the best breed of horses in Scotland, for the purposes of agriculture, is the square compact animal generally denominated "the Clydesdale breed," from a district of that name in Lanarkshire, more famed than any other for its pure breed of horses. We believe they have been originally crossed with the blood of the Cleveland stallions, the noted district in Yorkshire so famed for its horses for *fast work*. The Cleveland, as well as the "Suffolk punch," are valuable English breeds. On the whole, as true and indefatigable workers, well shaped, strong and active, and not difficult to maintain in condition, we consider the Clydesdale breed as second to any in Great Britain.

10.—I do not think that a *good* Clydesdale stallion, three or four years old, could be got at present under somewhat about £80; a good mare of the same breed would cost £40. But in the autumn, after the summer work is over, I have no doubt the stallion would be purchased for £15 to £20 less.

Draining.—The following, from the Farmers' Register, affords an instance of great perseverance. The writer disapproves of covered drains. They are, however, far the best, except where a large body of water is to be carried off.

"My main drain," says he, "is something less than 3000 yards in length, having the capacity to receive and discharge the spring and flood water from seven or eight thousand acres of land. 1800 yards were cut through a mill pond, which was made by a dam not more than two and a half feet high, which is now put down, by the kindness of the owner. Much of the country around is precipitous and broken; the water from which brought great quantities of sand and mud into my drain, and often made it necessary to clean it out fall and spring. This alone was great labor. Thirty-three years have passed over me since I began the work, and I cannot say that it is perfect. A drain like this must have no angles in it; for they create eddies, in which all washings will be left, and the work ultimately ruined. This important fact in draining I had to learn by experiment; and upon so long and crooked a stream, (and that a boundary,) to straighten all the angles, and make the drain at my own cost and loss, was not exactly pleasant. As a short rule for making drains, let me say that they should be *straight*, and of *full* capacity to contain the water thrown into them, always taking care to begin at the outlet or lowest point. By measure and estimate, sufficiently acurate for all my purposes, I have not less than thirty thousand yards of water and fence ditching, fifteen-sixteenths of which is necessary to the drying and draining of my farm. Not less than one-quarter of all these must be scoured and cleansed every year. Like a gambler, I was drawn into this work by imperceptible degrees, and finally played on because I had already lost so much. Separately considered as a matter of profit, I am not prepared to justify such expensive works. Nevertheless, they show young farmers that perseverance, with a very limited degree of knowledge and experience, will, in time, surmount what would seem to be insuperable difficulties. Though my land was once remarkable for its great growth of rushes, I believe it would now be difficult to find one. Clover and plaister operate well even upon that land that was covered 50 years by the mill pond. As for covered drains, I have made many, but they were very unsatisfactory; and I would not advise any to make them.

Time of Cutting Grain.—Contradictory opinions are given on the proper time of cutting grain. In this country, and in England, we believe the practice of cutting early is becoming more general. If judicious farmers in England harvest while the straw is a little green, it is certainly still more advisable to do so in this country, on account of the greater drying heat. A writer in the Virginia Farmers' Register says, "I consider wheat fit for the scythe when the grain is in the *dough state*—no matter how soft, provided it is clear of milk, or when no fluid comes out separate from the dough, when the grain is mashed between the fingers. But no one square yard of wheat can be found, in which all the heads have reached this state at one time; and therefore when not more than one-tenth part of the grains contain milk I consider it safe to begin to reap." This writer, as all farmers should do, has kept a journal of the time he commenced cutting his wheat since 1818:

"The following," says he, "are all the dates of the commencement of my harvests, which were recorded before my change of practice, and for some years afterwards.

1818—June 25th.
1819— " 23d.
1822— " 8th.
1823— " 13th.
1824— " 11th.
1825— " 10th.
1826— " 12th.—And might have begun 5 days sooner, if the state of other crops had permitted.
1827— " 16th.—The ripening stated to have been made unusually late, by the depredations of Hessian Fly, added to a cold season.
1828— " 12th.
1829— " 19th.—The beginning having been delayed two or three days by the pressure of other work.

The purple straw, and golden chaff wheats, were the kinds sowed.

Fossil Horns.—In excavating the Lancaster Lateral Canal, near a place called the "Deep Cut," bones of extraordinary dimensions have been discovered. Among the curiosities found is a horn six feet in length, weighing 44 lbs., and measuring at the butt end sixteen inches. Also, a tooth weighing 6¾ lbs.

VISIT TO HOFWYL.—In former numbers of the Farmer we have published accounts of this celebrated establishment; but we are sure our readers will be pleased in looking again at the beautiful and moral picture.

We have received, (say the editors of the London Penny Magazine,) the following interesting communication from a correspondent, upon whose accounts we can place a full reliance. The establishments for education, which have been founded and matured in Switzerland, by the public spirit and laborious perseverance of M. Fellenberg, have now existed about thirty-two years. Their high merits have been long familiar to the English public. At the present time, we understand that certain political dissensions, which have produced much ill-will and unhappiness in the canton of Berne, have had the common effect of all violent contests of opinion—they have made men indifferent or opposed to those institutions for the amelioration of the human character, whose great object is to elevate our species above intolerance and narrowness of party feeling. We trust that the open or concealed hostility which, it is said, now threatens the excellent establishment of M. Fellenberg, will speedily be put to shame by the good sense of the people of Switzerland; who will perceive in such institutions the surest preservation against the outbreaks of a mistaken zeal for freedom, on the one hand, and the tyranny of exclusive pretensions on the other.

"In the month of August, 1832, I travelled into Switzerland for the purpose of making myself acquainted with the schools and institutions at Hofwyl. Situated about three leagues from the picturesque capital of Berne, amidst a beautiful scenery, composed of a cultivated vale, the Jura ridge of mountains, a pine forest, a small lake, and the glaciers of the Bernese Alps, stand the extensive buildings of the establishment, surrounded by about two acres of farm land. Upon my first arrival, before I could obtain an opportunity of presenting my letters to the benevolent founder, I wandered about in various directions. All was business and activity. Here was a troop of lads cutting the ripened corn, while another troop was engaged in conducting it to the barns. Here was the forge in activity; and there some little gardeners performing various operations in small plots of ground that were portioned out. Here was a group of little girls gleaning; there others carrying water, most of them singing while thus employed. But my attention was peculiarly arrested by about one hundred men, who, in a large open building, erected in a recess of the garden, appeared to be engaged like boys in a school-room; over the entrance was inscribed this motto, 'The Hope of their Country.'

"I was at last fortunate enough to be admitted into the study of M. de Fellenberg—a man somewhat advanced in years, with a countenance beaming with intelligence and kindness. De Fellenberg was, by birth, one of the ancient aristocracy of the country, and in possession of the hereditary property of his family. He determined upon devoting his fortune, and the labor of a life, in the endeavor to effect the regeneration of his native land, by the means of education. 'I will infuse good habits and principles into the children.' For thirty-two years has he pursued his steady course, increasing in influence, and extending his establishment as his scheme grew upon him, until it has become what he described it to me. 'This,' said he, pointing to a large building, 'is the institute for the boys of the higher classes. Here are their dining-rooms; arranged on each side of yonder galleries, are their dormitories. Here you see their gardens, their museum, their work-shops, their school-rooms; here their gymnasium, where they exercise themselves in wet weather; here their stream of running water, where they bathe every day; study is their employment; bodily labor their recreation—but bodily exertion I insist upon. There is no health, no vigor of mind, no virtue, without it. Those persons grown to manhood, who are mixing with the boys, are placed by me to observe every action, and catch every expression. My grand object is to comprehend thoroughly the character of my pupils, in order that I may work more efficaciously upon them. These persons are by no means considered as spies by the boys—they are their companions. At Hofwyl, all that is not in itself wrong is permitted. I never like to forbid a thing when I am unable to assign a reason for doing so; it creates a confusion in young minds with regard to principle, a thing most dangerous to their future happiness. We have no boundary-mark, yet my boys stay at home: we interfere not with their pleasures, yet they cling to their duty.

"Within this enclosure is my eldest daughter's poor school for girls. She has about a hundred under her direction, who are fed and clothed by the establishment. To these she devotes her entire time. They learn all that in after-life will be of service to them—to clean the house—to cultivate the garden—to sew—to make all those little necessaries which are of so much importance in the cottage; to read, and sing—to be cheerful and to be happy. Unless our women be brought up in modesty, and with industrious and religious habits, it is in vain that we educate the men. It is they who keep the character of men in its proper elevation.

"Here is my school for the middling classes—here all instruction has reference to practical purposes. Man was born to have dominion over the earth, and to subdue it, but it is by the intellect alone that he can do so. His unassisted strength, what is it? To conquer Nature he must understand her. Look in here, and you will see the laboratory of the chemist, and the lever and the pulley of the mechanic.

"In these two buildings is my poor school for boys, who are boarded and clothed by the establishment. And well they earn their maintenance, for the little fellows work ten hours a day in the summer; and the expense that I incur in their behalf is nearly repaid by their exertions. They study for two hours each day, and this I consider sufficient. The case here is the reverse of the institute, for bodily exertion is the labor and study the recreation. The habits I bring them up with are those which I desire should continue with them through life; they consequently have reference to their probable position in society. The habit of continued study would ill become a person destined to gain his livelihood by his hands. Although there are now one hundred boys assembled here, mine were but small beginnings. I had but one pupil at first. It was long before I could find a master in whom I could confide. Do you observe those little patches of garden ground? Each poor lad has one to himself; and the produce belongs exclusively to him. They usually dispose of it to the establishment, which either pays them the money at the time, or lodges it for them in a little bank I have founded. Many of them have very considerable sums there. It is here that they obtain a habit of passing the greater portion of their time in continued labor; they become acquainted with the value of labor, by the produce of their little gardens. The instruction that I give them, although somewhat more elevated than what is generally obtained by persons of their rank in life, is directed to the rendering perfect the senses and reflection,—to make them better practical men; drawing, the sciences of arithmetic and geometry, a useful selection from the other sciences, all taught in the most unostentatious manner; the history of their native country, and an acquaintance with the different natural objects around them, together with music, form the extent of their literary instruction.

"Religion is inculcated in every way. Public prayer, both at church and at school, is regularly performed in common with the schools of other countries. Besides this, these poor lads are taught to see the Creator in his works. When their admiration is roused by a natural object, they are accustomed to direct their thoughts to its Maker.

"'But here,' said my venerable companion, 'is the engine upon which I rely for effecting the moral regeneration of my country, (and my attention was directed to the men whom I had before seen in the morning); these are the masters of village schools, come here to imbibe my principles, and to perfect themselves in their duty. These men have *six thousand* pupils under them; and if, by the blessing of God, I can continue the direction of them, success is certain.'

"To insure success M. Fellenberg spares no pains, no expense. There are no less than thirty-two professors solely devoted to his establishment, who inhabit a house to themselves upon the premises.

"In all, there are about three hundred and fifty individuals in this little colony. Despite of his enemies, the spirit of De Fellenberg is spreading throughout Switzerland; and after having seen the parent institution, I visited several of his establishments in some of the remotest cantons.

"A week closed my short sojourn at Hofwyl. I quitted it with a heavy heart; and the recollection of the moral beauty of what is there witnessed will remain rivetted on my memory for ever."

MORAL PRINCIPLES THE SAFEGUARD OF LIBERTY.—If our agricultural friends wish to know the cause of the depressed state of trade—if they wish to see illustrated the effects of intellectual education without moral and religious feelings and principles,—they must contemplate the acts and conduct of those leading public men who have blighted their country and tarnished its reputation.

The following article from the Scottish Guardian, although not correct in all its statements or reasoning, deserves, says the Annals of Education, deep reflection, and we have been gratified to see it circulating extensively through our newspapers.

Two Magistrates of Paris recently made a tour through the United States, and in the course of two years collected important information regarding the statistics of crime and education. In the state of New-York, 500,000 children, out of two millions, are at public schools; that is, a *fourth* part of the population, and £240,000 are annually expended for this purpose. Yet in this State crime increases, and that, too, though the means of subsistence and employment are so much more easily obtained than in any other countries. In Connecticut, education is still more extended, and nearly a *third* part of the population is at school. Yet crimes multiply to a frightful extent. The Journal of Education, stating these facts, draws this cautious conclusion: "If knowledge cannot be accused of *causing* this increase of crime, at least it has not *prevented* it."

On turning to France, and examining tables of the comparative proportion of instruction in its different departments, during a period of three years, the western and central provinces have been found the most uneducated—15, 14, 13, 12, and 8 per cent. only being able to read and write; but, according to an essay on the moral statistics of France, presented to the Academy of Sciences, the *minimum* of crime is to be found in these uneducated departments, and the *maximum* in Corsica and in the south-eastern provinces, and in Alsace, where nearly half the population can read. The different employments of the population may account for the difference in part; yet still we may again draw the cautious conclusion, that if education has not *caused*, at least it has not been seen to *prevent* crime.

The only ascertained moral effect of intellectual education was stated in last March by the Lord Chancellor, in the House of Lords. In Russia, where education can scarcely be said to

exist, out of 5,800 crimes committed within a certain period, 3,500 were accompanied by violence; while in Pennsylvania, where education is generally diffused, out of 7,400 crimes, only 640 were accompanied by violence, being in the proportion of $\frac{1}{12}$ of the whole number, instead of $\frac{3}{5}$, as in the former case. Thus the only ascertained effect of intellectual education on crime is to substitute *fraud* for *force*—the *cunning* of civilized, for the *violence* of savage life. Nor would even this small change be permanent. A highly intellectual community, without moral principles and the habits of self denial which religion imposes, would only prove a sleeping volcano, ready to awaken every moment, and overthrow those very institutions under which it had been fostered. To increase the intellectual power, and enlarge the knowledge, of a man void of principle, is only to create in him new desires, to make him restless and dissatisfied, hating those that are above him, and desirous of reducing all to his own level; and you have but to realize universally such a state of society, to fill the cup of the world's guilt and misery to the *brim*. What do we say then? Not certainly that education is to be withheld from any member of society,—for that question is now decided, whether we will or not,—but that from the infant school, upwards to the university, it must be a thorough *Christian* education, in which our youth shall be trained in the ways of virtuous self-control, and piety and righteousness wrought into the understanding and into the whole habit of man. A perfunctory religious education will no longer serve—not mere Bible reading—but Bible education. The understanding must be enlightened, and the heart must be gained over to the side of truth and righteousness. In short, *the grand aim of education* must become, not merely the formation of intellectual habits, or the acquisition of secular knowledge, (as is too exclusively the case in present times,) but the formation of the Christian character. Men have hitherto been prone to take for granted, that it was only necessary to teach the art of reading, and before this new power all vice and error would flee away. These are dreams of men ignorant of themselves, and ignorant of our poor nature. Men must be trained to piety and virtue as they are trained to any other habits, whether intellectual or physical; and the moral man must advance contemporaneously with the intellectual man, else we see no increase from our increased education, but an increased capacity for evil doing.

The following application of this truth to our own country and its peculiar dangers, from the Northampton Courier, is another gratifying evidence of the increased interest taken in the subject.

"We believe that there is much truth and justice in the remark, that other influences besides that of force must be exercised, to keep the Union of these states permanently together. Statutes may be enacted, constitutions framed, and interests multiplied, but if there is not a primary feeling of moral obligation and fraternal duty, to cement and enforce them, the duration of this government, like all others, is extremely questionable and uncertain. Pecuniary interest, and common defence, and general prosperity, are but transient ties, which can be thrown off to suit the excited spirit of the times, or changed to meet any pressing emergency. They are but selfish bonds, which yield at the rude touch of popular disaffection, and are easily rent by the misguided voice of public sentiment, and vindictiveness, and clamor. But if legal enactments and obligations, and physical wants, and common defence, do not constitute security against dissolution, what influences can be exerted to sustain and strengthen a civil compact of such stupendous weight and importance as our own? If these things fail, what iron will enter the souls of men, to enforce their moral obligations, and to impress upon them the maxim of 'union,' with certain safety and security?

We think a *moral* obligation, and religious feeling, and fraternal affection, which is founded in the heart, and has its emanations from the soul, if rightly cultivated, will insure this purpose, and guarantee its permanent duration. Some deep abiding sentiment, some strong affection of the mind, some radiating influence from the heart, which rises above selfishness, and pecuniary wants, and sordid interest, which all feel and acknowledge, is what should be cherished and cultivated, to bind with adamantine chains the different parts and sections of this our own favored country together.

Yes; it is by cultivating the sense of 'moral obligation and religious feeling,' and the 'fraternal affection,' which is their necessary concomitant and result, that our own union is to be maintained, (for we are unwilling to add the qualification which is chilling so many hearts,) and not by constitutions of parchment, or even by the arm of power. If our laws are not supported by our feelings, and principles, the force which we use to maintain them, may indeed make us *fellow prisoners*, or *fellow subjects*, but never can unite us as *brethren* or *fellow citizens*. France has long sought to establish moral principle on some other basis than that of Christianity; but she has renounced this visionary plan, and now requires the *New Testament* to be employed as the text book of morals and religion in every school in the empire. Let us profit by her example, and retain the precious legacy of our purer, happier ancestors.

Examples of Self-Education.—It is not a little encouraging to those who long for the advancement of society, to see the results of that education which *is* gained by some in the school of nature and providence, with little of the aid of man—and in this view we publish the following example.

Mr. Ewing, U. S. Senator from Ohio, is perhaps the most conspicuous man in this State at the present time, unless Judge M'Lean be an exception. Although he has been in Congress but a single session, he has acquired a high reputation as a statesman. I should think him to be about forty. He is a self-made man—a striking exemplification of what a man can attain to by merely *personal effort*. He is a native of this State, and was born poor. In his youth, his principal employment was wood-chopping. Being very athletic, he excelled in the labors of the axe. At length, when he had become what would be called, 'a great, overgrown, awkward, brawney young man,' by a fortunate jostle, a desire for an education waked in his bosom,—he directed his steps to this institution, where he completed his education preparatory to the study of the law. In term time he chopped wood at the college door—and in vacation, it was his custom to swing his axe upon his shoulder, and go forth in search of a job; which he would accomplish, and return with fresh vigor at the commencement of the next term. In this way he sustained himself while in college, and came out with a constitution as vigorous as when he entered. And now he is a senator of the United States.

Disease in the Feet of Sheep.—As the persons employed on the farm of Anthony Anderson, Esq., at Dorchester Bridge, were shearing his sheep, on Thursday, the shepherd called his attention to a small orifice bust, at the separation of the foot of one of these animals, and told him that it was a disease called the *worm in the foot*, which Anderson, though an experienced farmer, informs us he had never seen, or indeed heard of. The shepherd advised that the wound should be pared down so as to get at the head, and with a strong needle he passed some doubles of thread through it, and extracted what he called the worm. It appears to be a *Hydatid*, or bladder-like skin, containing a fluid not unlike starch, and a small portion of a hairy substance, resembling the short wool on the legs of sheep. Mr. A. extracted one such worm, from each foot, all similarly placed at the articulation of hoofs; and found five or six of his sheep afflicted in like manner. After extracting the cause of the disease, whatever name be applied to it, he filled the cavity with pepper and salt.—[Quebec paper.]

Apples for Live Stock.—A farmer in Blandford says cows fed with apples in the autumn will give milk as abundantly as in June, and that he cannot perceive any difference in the beneficial effects of sour and sweet apples. Another, in East Granville, says he can make as good pork and beef with apples as potatoes. It is the opinion of many that a bushel of the former nearly equals in value a bushel of the latter. Such facts we think are of great value to the farmer: if he can convert his apples into beef and pork, or by them increase the products of the dairy, then a way is opened for the conversion of fruits into money without going through with the longer and more tedious process of converting them into cider, and that into brandy, and that into money. Again, if pork, beef, butter and cheese, can be made from apples, they will yield a greater profit to the farmer than if he make these articles by the aid of potatoes or grain, since they cost but little.—[Westfield Journal.]

Wild Deer and Rattle-Snake.—In the western parts of Virginia are dens, where the rattle-snakes and other serpents retire, on the approach of cold weather, into winter quarters, and where in a torpid state, like others of the serpent tribe, they while away that dreary season in a state of insensibility to cold and hunger. In the spring, when the genial influence of the sun quickens them into active life, they crawl forth from their brumal retreats, and enjoy the pleasures of a renovated existence in their own peculiar manner. In their travels through the woods and fields, they generally wend their serpentine way along the paths, previously made, and there not unfrequently meet with travellers of a character and species very different from themselves. Among the members of the animal kingdom, that frequent that district of country, is the wild deer, between whom and the rattle-snake there appears to subsist a most inveterate instinctive hatred. When the deer, in the elevated pride of his character, moves gracefully along the path where the rattle-snake is travelling, they both instantaneously halt in their course, and prepare for a combat which is to terminate in the death of one or the other of the combatants. The snake immediately coils and prepares for the fatal spring; the deer slowly recedes, and coming up with lofty but graduated bounds, leaps, with as much precision as is possible, with his hard and horny feet upon the serpent: and if he miss him, passes rapidly on, and returning, renews the contest, and attempts to spring upon him again and again. The serpent on seeing the deer moving towards him, patiently awaits his approach, and as soon as he conceives him to be within striking distance, darts with the most venomous intent upon him, and if not disabled when the deer approaches him a second and a third time, the rattle-snake repeats his springs, and if he strike the deer, the latter is soon put *hors du combat*, swells, and dies. On the contrary, if the deer strike the rattle-snake with his hoofs, the latter has his backbone broken, and discomfited expires. And it is a fact, well known to many, that those two hostile animals never separate, after they meet, until one of them dies. This fact is derived orally from a former Reverend President of a college, whose reputation for knowledge and veracity is of too lofty a character to be impeached.—[N. Y. Sun.]

A lady who died in England in 1816, bequeathed to six of her horses an annuity of £50 each. These happy and well-fed horses died at the respectable ages of 28, 29, 31, and 33. The last but recently departed this life, having enjoyed his annuity more than seventeen years, and received about £800.

CULTURE AND EXTRAORDINARY PRODUCTIVENESS OF THE OXALIS CRENATA.—We are indebted to the Quebec Mercury for the following interesting article:

This vegetable has been newly introduced in England, and on the limited experience a brief acquaintance with it has enabled those who have cultivated it to acquire, it is regarded as a plant of considerable promise and well worth attention. It is cultivated by tubers, and we have great pleasure in adding another instance of greater feeling with which the efforts of our new Quebec Society for the Improvement of Agriculture are encouraged by societies, having the same purpose in view, in the mother country, in announcing that some tubers of this plant have been forwarded to its Society, by the Royal Devon and Cornwall Botanical and Horticultural Society, accompanied by the fourth annual report of their Committee, from which we extract the following notice of the *Oxalis Crenata*.

"It is cultivated by tubers, which being furnished with eyes like those of the potato, may, like it, be divided into several cuttings; but, as the substance of the tuber is the magazine destined by nature to sustain the plant till it acquires sufficient strength to draw its nutriment from the soil, it will perhaps be advisable not to make the division too small, or rather to plant the tubers whole, and reverse the division till after the plants have acquired such a size as to be independent of the nutriment of the parent tuber. While their culture is restricted to the limited operations of the garden, and perhaps also even after they have attracted the attention of the farmer, Mr. Beaton recommends making the tubers germinate in pots protected from the severities of the early spring; a practice which will facilitate the subsequent division just recommended. They should not be planted out in the open ground till the advancing season has removed all danger of severe frost. When transplanted, they should be put in ground well dug and rendered permeable to their roots, and should not be set closer than from four to six feet apart. They will grow well, as Mr. Beaton observes, in any light soil, but a very rich soil is best for a heavy crop. The best method of planting would perhaps be to set them between drills, the earth of which may from time to time be brought down over them with a hoe. The thick succulent stems which are thrown up in profusion during the summer make excellent tarts, resembling those of rhubarb or gooseberries, but requiring less sugar; while the leaves are a grateful food to many domestic animals, and the tops and smaller branches may be employed as cuttings to extend its culture, and augment the production of tubers. Cuttings of this kind, stuck in the open ground without any peculiar care, as late as the 26th of last October, were found, when examined on the 16th of the following month, not only to have thrown out radical fibres, but to have commenced the formation of tubers. The plants flower during the greater part of August and beginning of September, and when covered with a profusion of golden blossoms, make a handsome appearance in the flower garden. Cuttings taken at this time, even when loaded with flowers, root freely, and produce their tubers at the usual season. In October the production of tubers commences, and such is the profusion with which they are thrown out, that, in rich soils, they not only fill the ground to the exclusion of every thing else, but frequently even form on the stems above the surface of the ground. As the production of these tubers does not appear to commence at present earlier than the first of October, and as their growth and production may be affected by cutting the herbage after that day, it would be worth while to determine the question by a careful examination of the produce of two plants growing in circumstances perfectly similar, the herbage of one of which had been cut after this period, while that of the other was left untouched. The herbage when cut during the summer months is rapidly reproduced; and Mr. Beaton states that on the 27th of last September he obtained no less than ten pounds' weight of green food from a single tuber, planted six feet apart from any other. He considers this herbage as superior in summer to every other kind of green fodder for cattle.

Attempts having been made to discourage the experiments now prosecuting for the purpose of ascertaining the real value of the *Oxalis crenata*, as an article of sustenance for man, as compared with other productions of a similar nature, the secretary of the Horticultural Society feels it his duty, as a friend to every improvement calculated to add to the comforts of the poor, and provide for the wants of our increasing population, without attempting to give any positive opinion, or create hopes which may terminate in disappointment, to lay before the society from time to time such *facts* as may come to his knowledge from *authentic sources*, accompanied with such suggestions as those facts may present; distinguishing, however, the *facts* from the *theory*, and leaving his readers to estimate the value of the *latter* from the details of the *former*. On the 7th of April, a tuber of the *Oxalis crenata*, weighing only 28 grains, was planted in an old cucumber bed, in a garden on the east side of Plymouth. About five weeks after, two offsets were taken from it and planted separately in the common soil of the garden. The parent plant grew with surprising vigor, and soon spread over an elliptic space, the transverse diameter of which measured three feet seven inches, and the conjugate diameter three feet one inch. Early in November, the proprietor, having accidentally disturbed the ground, broke off a few tubers from one of his plants, which he cooked, and found to be most delicious, resembling the flavor of a mealy potato, without the slightest trace of acidity. On the night of the 25th and the morning of the 26th November, there was a smart frost, which injured the herbage of the plants, and from which they did not again recover. On the 14th of December, he at length took up the roots, when he found the produce to be as follows:

Parent plant, 407 tubers, weighing	7	lbs.	8	oz.	14 dr. 22 gr.
Two off-sets, 198 " "	3	8	0	0	
Total, 605	11	0	14	22	

being a return of no less than *two hundred and seventy-five thousand per cent.*, a return almost unparallelled in the annals of horticulture. Of these tubers, one, now in the possession of the secretary, who will be happy to show it to any desirous of examining it, displays the singular form of a compressed cone, or rather triangle, two of whose sides measure one inch and six-eighths, while the remaining side measures two inches, so that it is as nearly as possible equilateral, with a thickness of nearly six-eighths, and weighs 300 grains, or nearly 14 times the weight (28 grains) of the tuber originally planted; this *one tuber* alone being a return of no less than 1392.86, or nearly 1393 per cent. The time occupied from the planting to the digging did not exceed 251 days, or the time usually required for the potato to bring its tubers to perfection, and there is reason to believe that this period might have been advantageously shortened by a month or more, for when the proprietor tried the tubers in the early part of November, they were superior in flavor to the best potatoes, while some of those dug on the 14th of December last, had acquired more or less of an acid taste, which was disrelished by many. It has been already observed that the plants were cut off by the frost of the 26th of November, after which it is probable that the growth of the tubers, *as to size*, ceased to advance, and nothing consequently was gained by leaving them in the ground—but as the frost was followed by a succession of warm humid weather, favorable to vegetation, it appears probable that, although ceasing to advance in size, the tubers, or many of them, began to germinate; now the process of germination, as in the familiar instance of malting, is well known to be accompanied with the formation of sugar, from the absorption of oxygen, both from the decomposed humidity and from the surrounding atmosphere, by the farinaceous portion of seed. In plants, however, whose product, in place of being saccharine, is a peculiar acid, as in the family of the sorrels, it is not improbable that the combination of the oxygen during the progress of germination, with the farinaceous portion either of the seeds or roots, forms that peculiar acid which, from the genus by which it is furnished in the greatest abundance, has been termed the oxalic acid; and hence, those tubers which, prior to the 26th of November last, were perfectly sweet, became subsequently, from the commencement of germination or malting, more or less acid according to the degree of progress made. This hint, founded perhaps upon an erroneous analogy, is merely thrown out for the purpose of calling attention to the subject, eliciting information from those more competent to supply it, and removing any unreasonable prejudice which may have been created in the minds of those who have tasted the tubers at an improper stage of their growth. As for those whose fears may have been alarmed by the information that oxalic acid exists in the oxalis crenata, it is but just to relieve their apprehensions by stating that the acid does not exist in its deleterious state, but in the form of a neutral salt, the super oxalate of potassa, whose effects, in the common wood sorrel of the hedges (*Oxalis acetosella*,) the sorrel dock (*Rumex acetosella*,) and other similar vegetables freely used as sallads, are eminently antiscorbutic and beneficial to the health.

It is stated that the tubers of those plants of the oxalis crenata, which have blossomed, are larger and better than those of plants which have not flowered: the fact, if correct, is important, and deserves inquiry, especially as the reverse is said to happen in the case of the potato (*Solanum tuberosum.*)"

ON THE PRESERVATION OF POTATOES.—Potatoes at the depth of one foot from the ground, produce shoots near the end of spring;

at the depth of two feet, they appear in the middle of summer; at three feet of depth, they are very short, and never come to the surface; and between three and five feet, they cease to vegetate. In consequence of observing these effects, several parcels of potatoes were buried in a garden at the depth of three feet and a half, and were not removed till after intervals of one and two years. They were then found without any appearance of germination, and possessing their original firmness, freshness, goodness, and taste.—[Ann. Soc. d'Agric.]

Churning Butter.—Not many days since, on entering the house as usual about dinner time, I found my family very much perplexed about the cream which they had been churning for about two hours, and yet no signs of butter. On examination I found the cream was worked into a perfect *froth*. I was satisfied that unless something could be done to change its nature or condition, churning would be useless: I therefore threw into the churn as much common salt as I could hold in my right hand; I then put the churn in motion, and in 15 minutes, by the clock, the butter had perfectly separated from the milk.—[Ohio Farmer.]

Silk.—The Connecticut Silk Manufacturing Company are to receive $11,500, to aid and encourage them in establishing a silk factory; Messrs. Gay and Bottum, mechanists of Lisbon, $2,000, as a remuneration for their labor and expense in inventing and constructing silk machinery; the Mansfield silk factory, $1,500; the State House yard, $8,000, and the remaining $2,000 goes into the State Treasury.—[Hartford Review.]

A cotton factory has been established at Greensborough, N. C. It has five hundred and twenty-eight spindles in operation, and is capable of manufacturing between two and three hundred pounds of thread per day.

Manure from Hogs.—This is the season for farmers to avail themselves of every opportunity to collect every substance that can be made into manure. Let every farmer look about him and endeavor to find sources of increasing his manure. The following is from the Northern Farmer:

One of the regular means which every farmer possesses, for the increasing of his stock of manure, and which is by no means the least valuable, is by many totally neglected. It is that of making their hogs serviceable in this business. Upon this point, I can speak from past experience, both in respect to the loss from neglect and the advantages derived from these valuable animals, when employed for this purpose. It was my practice, till within the last fifteen years, to permit my swine to roam at large in the highway, in the summer season; or what was but little better, confine them in a pasture, for three or four months during the warmest of the season; carrying whatever I might have to give them as feed, to the place in which they were confined. I began, however, after a while, to consider this course of turning hogs to pasture, or permitting them to run in the highway, to be altogether wrong. Upon mature reflection, I concluded that by confining them in a close yard, and furnishing them with the materials for making manure, the profits would be amply sufficient, not only to repay me for all the trouble of furnishing the materials, but would also enable me to give them better keeping; and, in this respect, my anticipations have been fully realized. One error, however, I committed in the outset, and I have noticed the same fault in others. It was this: my yard was at first made at least three times too large, embracing about two and a half rods of ground, for three or four hogs, the number which I generally keep; and I have seen yards including a much larger space made by some farmers, for an equal number of hogs. Now this, where the object is the making and saving manure, is, in my judgment, wrong; for, in so large a space, the quantity of materials put into the yard must be very great, or it must lie very thin over the yard; in either case, the benefit received from three or four hogs is but small; at least I found it so, where the materials, of whatever nature they might be, were put in one season and carried out the spring following. I therefore diminished my yard to twenty feet by fourteen, about one-third of its original dimensions; and I find this space to be sufficiently large for four hogs; and, I believe, large enough for even six to make manure to advantage; for in this space, materials sufficient for twenty or twenty-five loads of manure may be deposited in the course of one season; and what to me seems of the first importance in this business, is the hogs are kept continually on the materials, except when in their house, for the purpose of eating and sleeping.

My method of supplying these materials is the following: after having cleared their yard at the season of planting, I put into it such portions of straw as I may have left on hand, after the season of foddering is past; and if I have not a sufficient quantity of this, to furnish the necessary supply till vegetable substances attain to a sufficient growth to be profitably collected, I put in earth collected from the low places, by the side of the high-way; though this I more generally place in or near my barnyard, in a situation to receive and retain the wash that might otherwise escape from that. Brakes and weeds of any kind are valuable. These I make use of to the extent they are obtainable, when in a green state; as I consider green vegetable substances, for this purpose, far more valuable than dry. Potato tops when pulled for early use, before they become dry and shrivelled, I consider equal if not superior to any other green substances for this purpose. Pea-vines I usually put into my hog yard, after the peas are threshed off; and if some are put in before being threshed, they are as gratefully received by the inmates of the yard. Buck-wheat straw I have made use of, but I deem this to be of all substances the least valuable for the purpose of making manure, when it has ripened into a dry state, however valuable it may be when ploughed under in a green state, as it unquestionably is; being at that stage of its growth one of the most juicy plants of the vegetable kingdom.

I add nothing by way of materials to my hog yard, after the first of September, at which time I generally commence feeding, for the purpose of fattening; and by the middle or twentieth of December, my usual time for killing my hogs, I make from four to five loads of manure to each hog so kept, superior to the summer dung, obtained by yarding my cows. And the quantity made by my hogs is for each one double to that made by each cow for the same period of time.

Thus I have endeavored to present to the readers of the Farmer my method of adding to my stock of manure by the aid of my hogs from fifteen to twenty loads annually: whereas, I used formerly, as too many do at the present day, who call themselves farmers, entirely to neglect all these advantages, the improvement of which is so essential to profitable farming. It is to be hoped, however, that no farmer, who has the opportunity of reading an agricultural paper, is so remiss, in relation to that which is so conducive to his best interests. Matthew Buell, Jr.

Newport, May 31st, 1834.

Hail.—Hail fell in St. Francisville, La. on the 27th of March, and killed some sheep, chickens, &c. Some of the stones were as big as turkey's eggs.

Baking.—The following observations were given to us by a respectable baker.

Baking is one of the cheapest and most convenient ways of dressing a dinner in small families; and I may say *the oven* is often *the only kitchen a poor man has*, if he wishes to enjoy a joint of meat at home with his family.

I don't mean to deny the superior excellence of roasting to baking; but some joints, when baked, so nearly approach to the same when roasted, that I have known them to be carried to the table, and eaten as such with great satisfaction.

Legs and loins of pork, legs of mutton, fillets of veal, and many other joints, will bake to great advantage if the meat be good; I mean well fed, rather inclined to be fat: if the meat be poor, no baker can give satisfaction.

When baking a joint of poor meat, before it has been half baked, I have seen it start from the bone, and shrivelled up scarcely to be believed.

Besides those joints above mentioned, I shall enumerate a few baked dishes which I can particularly recommend.

A pig, when sent to the baker prepared for baking, should have its ears and tail covered with buttered paper properly fastened on, and a bit of butter tied up in a piece of linen to baste the back with, otherwise it will be apt to blister; with a proper share of attention from the baker, I consider this way equal to a roasted one.

A goose prepared the same as for roasting, taking care to have it on a stand, and when half done, turn the other side upwards. A duck the same.

A buttock of beef, the following way is particularly fine. After it has been in the salt about a week, to be well washed, and put into a brown earthen pan with a pint of water; cover the pan tight over with two or three thicknesses of *cap* or *foolscap* paper; never cover any thing that is to be baked with brown paper; the pitch and tar that is in the brown paper will give the meat a smoky bad taste—give it four or five hours in a moderate heated oven.

A ham (if not too old) put in soak for an hour, taken out and wiped, a crust made sufficient to cover it all over, and baked in a moderate heated oven, cuts fuller of gravy, and of a finer flavor than a boiled one. I have been in the habit of baking small codfish, haddock, and mackerel, with a dust of flour and some bits of butter put on them; eels, when large and stuffed; herring and sprats, in a brown pan, with paper. All these I have been in the habit of baking for the first families.

The time each of the above articles should take depends much upon the state of the oven, and I do not consider the baker a sufficient judge; if they are sent to him in time, he must be very neglectful if they are not ready at the time they are ordered.

Attempt to assign the Cause of the Spontaneous Combustion of Charcoal. By Mr. JOHN DAVIES, Member of the Wernerian Society of Edinburgh, &c. and Lecturer on Chemistry, &c.

In the above interesting paper, no attempt has been made by the author of it to furnish an explanation of the phenomenon which he has established and described; and as every inquiring mind will direct its attention to a rationale of the operation, I presume that some remarks which have occurred to me within the few last days, and which may at least supply some aid in the discussion, may be without impropriety appended to the paper. These remarks, though theoretical, are countenanced by experimental analogies, which, if they fail to establish the accuracy of the speculation, may, at least, excuse its introduction.

A statement of the mode in which the charcoal in question is made, will be necessary in the subsequent explanation. Small fragments of wood, generally stripped of their bark, are put into iron cylinders, and exposed to intense heat, in order to effect the distillation of the volatile constituents for the manufacture of iron liquor. Now, Mr. Brunner resorted to a similar procedure in obtaining potassium from potash and charcoal; and as we know that potash may be procured from the wood employed by Mr. Hadfield, we have in his manufacture the same operation and the same materials as in M. Brunner's experiment, and may therefore expect the same results. The only difference would be, that as M. Brunner used much potash, he procured a large proportion of the metallic base; while in the other case the potassium must be in small quantity, because all the potash present would be only that supplied by the wood subjected to distillation: and yet, upon the whole, the quantity extracted under the latter circumstances is not inconsiderable; for it is by the combustion of such wood in America, where it is of comparatively little value, that the potash is principally formed which is consumed in the arts and manufactures in every part of Europe.

It is manifest, therefore, that in the formation of Mr. Hadfield's charcoal, potassium must, in small quantities, be liberated.

Supposing the presence of potassium in fresh charcoal to have been established, we have now to explain its operation; and this appears to be effected upon the assumption that the metal lingers in the pores of the charcoal, incased, as it were, in the substance, until it be at length exposed to the action of atmospheric air and aqueous vapor. This view of the subject derives plausibility from the facts, that the combustion does not commence at any considerable depth below the surface; and that when a thermometer is introduced into the mass, the ignition generally originates in that place; that is to say, the combustion occurs exactly where it might be expected, since it takes place at the part which, favorably situated, is most exposed to the action of the supporter of combustion.

This general view of the spontaneous combustion is directly countenanced by the excellent paper of Colonel Aubert, inserted in the "Bulletin des Sciences Militaires" for January, which Mr. Hadfield has offered me the opportunity of consulting. This ingenious foreigner shows by a number of decisive experiments, that the absorption of air and moisture is indispensable in the production of the phenomenon. He proves also, (what Mr. Hadfield has in a different way very clearly confirmed,) that no carbonic acid is formed before the incandescence occurs—a fact strictly in accordance with the hypothesis which I have offered; since upon this hypothesis the oxygen of the air, instead of forming an acid with the carbon, produces, by its superior affinity, an alkali with the potassium. The next position which he establishes, is that the carbon increased in weight in proportion to the quantity of air and moisture absorbed; and this should, according to the explanation suggested, occur, the alkali formed being much heavier than its metallic base. It appears that, to produce the ignition, the charcoal should not only be reduced to powder soon after its formation, but that the sooner it is so reduced the more certain and considerable will be the effect. Now, this fact also is entirely consistent with the explanation, because, when the pulverization has been delayed, air and moisture will have gradually produced the alkali, by a process imperceptible, because the minute portions of potassium would be at comparatively distant intervals from each other, and thus would not be in sufficient quantity at any one place to produce a sensible effect.

Colonel Aubert pulverized a mixture of coal and sulphur, and he found that under these circumstances no ignition ever occurred. The reason is obvious: for the potassium, which has been conceived to be the cause of the combustion, entered during the trituration into combination with the sulphur.

He also triturated charcoal with nitre, and he again found that the spontaneous combustion was prevented. Now nitre, by mingling with the potassium, would check its too rapid absorption of oxygen; and the effect of his experiment is in this way sufficiently accounted for.

The presence of the potassium seems to account for the circumstance, that when charcoal is moistened and subjected to heat, carburetted hydrogen is set at liberty. In this instance it would appear that the water is decomposed, the hydrogen evolved, and the oxygen united with the potassium to form the alkali. If the heat be continued, carbonic oxide would be evolved; the oxygen absorbed in the first part of the operation being again detached from the metallic base. Now this explanation corresponds precisely, I believe, with the order in which, in such an experiment, these gases are produced.

All these circumstances observed by Mr. Hadfield and Colonel Aubert appear, therefore, perfectly reconcilable with the supposition that the spontaneous incandescence is owing entirely to the oxidation of the potassium liberated from the wood during the manufacture of the charcoal.

Dr. Thompson, in the second volume of his History of Chemistry, published since my paper was read to our society, has thrown additional plausibility upon my explanation, by his attempt to show that phosphorus owes its property of catching fire, when in contact with oxygen, to a little potassium, which is reduced to the metallic state during the formation of the phosphorus.—[Phil. Mag.]

THE POSSIBILITY OF NATURALIZING THE FIRE-FLY.—It abounds not only in Canada, where the winters are so severe, but in the villages of the Vaudois, in Piedmont. These are a poor people, much attached to the English, and at ten shillings per dozen would no doubt deliver in Paris, in boxes properly contrived, any number of these creatures in every stage of their existence, and even in the egg, should that be desired; and if twenty dozen were turned out in different parts of England, there cannot remain a doubt, but that in a few years they would be common through the country, and in our summer evenings be exquisitely beautiful.—[Mag. Nat. Hist.]

MONTHS.—This division of the year appears to have been used before the flood;* and as it is naturally framed by the revolutions of the moon, the months of all nations were originally *lunar*, that is, from one new moon to another. In a more enlightened period, the revolutions of the moon were compared with those of the sun, and the limits of the months, as the component parts of a year, were fixed with greater precision. The Romans divided each month into *Calends*, *Nones*, and *Ides*; the *Calends* were the first day of the month, the *Nones* were the seventh, and the *Ides* the fifteenth of March, May, July, and October; in the other months the *Nones* fell on the fifth, and the *Ides* on the thirteenth. The days of each month, according to this form, were counted backwards; thus, the 18th of October was called *the 15th day before the Calends of November, &c.*. In the year 1793, the French Government had a new calendar constructed, in which they adopted the following fanciful designations for each month:

	French.	*Signification.*	*English.*
AUTUMN—			
1.	Vindemaire,	Vintage month, -	from Sept. 22
2.	Brumaire,	Foggy month, - -	Oct. 22
3.	Frimaire,	Frosty or sleety month,	Nov. 21
WINTER—			
4.	Nivose,	Snowy month, - -	Dec. 21
5.	Pluvoise,	Rainy month, - -	Jan. 20
6.	Ventose,	Windy month, - -	Feb. 19
SPRING—			
7.	Germinal,	Springing or budding mo.	Mar. 21
8.	Floreal,	Flowering month, -	April 20
9.	Prairial,	Hay harvest month, -	May 20
SUMMER—			
10.	Messidor,	Corn harvest month, -	June 19
11.	Thermidor,	Heat month, - -	July 19
12.	Fructidor,	Fruit month, - -	Aug. 19

This *new* calendar, which, after all, was only a plagiarism, or copy of one used in Holland from time immemorial, like many of the absurd institutions which sprang from the French Revolution, was laid aside in a few years, from the circumstance of its utter unfitness for the seasons, even as they occur in the several provinces of France itself; how much less applicable, therefore, must they have been to other countries, where the climates and seasons vary so much from each other! A calendar, to be worthy of universal adoption, must be capable of universal application. Not so that of the French *Philosophers*, which, independently of its discordance with those of all civilized nations, had not even the merit of indicating those very seasons from which it professed to derive its character. The late Mr. Grifford ridiculed this new-fangled method of registering time by the following ludicrous but happy translation of the republican months and seasons:

AUTUMN . .	Wheezy, sneezy, freezy;
WINTER . .	Slippy, drippy, nippy;
SPRING . . .	Showery, flowery, bowery,
SUMMER . .	Hoppy, croppy, poppy.

* Noah, as we find it recorded in the Bible, reckoned by months of thirty days each, and from him that mode of computing the year is supposed to have been adopted by the Chaldeans, Egyptians, and other Oriental nations.

To JOHN O. N. RUTTER, *Wine Merchant, for his Invention of an improved Process for generating Heat, appplicable to the heating of Boilers and Retorts, and to other Purposes for which Heat is required. Sealed March* 30, 1833.

The subject of this patent is the employment of bituminous, resinous, or oily matters, in connection with water as a combustible material, which, it is said, will produce a fuel for furnaces, boilers, &c. capable of giving out a very intense heat. Strange as the suggestion of applying water as a combustible material may appear, it is reported to have been found extremely advantageous, economical, and convenient. We of our own knowledge can say nothing upon the subject, but merely give the patentee's views and recommendations in reference to the manner in which he proposes to employ those materials for the production of heat.

Bituminous, oleaginous, resinous, waxy, or fatty substances, are to be employed: as coal tar, which is to be combined with water in certain proportions. It is proposed that a stream of coal tar shall be allowed to flow from a reservoir through a pipe with a stop-cock, and likewise a stream of water from another reservoir through a similar pipe; that the two streams shall meet, and fall into one general receiver with a funnel tube, by which they may be together delivered into the furnace.

The proportions are recommended to be one gallon of coal tar to one gallon and a half of water, the flow of the two liquors to be regulated by suitable apertures or stop-cock. These quantities of materials are to be slowly discharged from the funnels that the whole shall occupy from two to three hours in its delivery into the furnace; and where the furnace is of such magnitude as to require it, several of these funnel tubes may be employed, each delivering its supply of materials in the proportions and times stated.

It is not necessary to use water in a pure state, to be mixed with the coal tar, as foul water will answer the purpose equally well; and on ship-board, where the invention may be usefully applied to steam navigation, the bilge-water from below, or sea-water, may be pumped up and employed for the purpose, and on land the ammoniacal liquor from gas works will also suit as well as fresh water.—[London Journal.]

Correct Fusing Points of Metals and Alloys, and other important Temperatures, upon various Thermometrical Scales. [From the Repertory of Arts, &c.]

In the thirteenth edition of Parkes' Chemical Catechism, edited by Mr. Brayley, jun., which has just appeared, we find a "Table of the Effects of Heat," (p. 606), in which the higher temperatures have been corrected by the editor, agreeably to the pyrometrical researches of Mr. Daniell and other chemists. As we do not remember to have seen any connected view of the results, as to the correct fusing points of metals and alloys, &c., which Mr. Daniell has obtained by the use of his new register pyrometer, we subjoin an extract from this table, containing the temperatures from 212° upwards. It may be requisite to state, for the information of such of our readers as may not be acquainted with the present state of pyrometry, that Mr. Daniell has shown (as we find it explained by Mr. Brayley at p. 70, *notes*, of the Chemical Catechism,) that "the degrees (above the zero of 1077° Fahrenheit, which is stated to be a red heat visible in the daylight,) of Wedgwood's pyrometer, instead of being equal to 130° of Fahrenheit, as supposed by its inventor, are equal only to about 20°;" and that consequently the *range* of that instrument, instead of including 3200 degrees of Fahrenheit, did not really include more than about 5000°: this will account for the great difference of the corresponding temperatures of Fahrenheit, &c., and Wedgwood, as here stated from the new edition of the Chemical Catechism, from those given in former editions of that work, and also in many other publications on chemical subjects.

Fusing Points, &c. on the scales of	Fahr.	Reau.	Cent.	Wedg.
Water boils, and "fusible metal" [$\frac{8}{15}$ bismuth, $\frac{5}{15}$ lead, $\frac{2}{15}$ tin, smelt]	212	80	100	
Sulphur melts	216	89	111	
Nitrous acid boils	242	93	116	
Camphor melts	288	114	142	
Sulphur burns slowly	303	120	150	
Pewter melts, [lead $\frac{4}{5}$, tin $\frac{3}{5}$,]	403	165	206	
Tin melts	442	182	227	
Type metal melts, [lead 16 parts, antimony 1,]	507	211	264	
Sulphuric acid (sp. gr. 1·848) boils	590	248	310	
Lead melts	612	258	325	
Mercury boils	662	280	350	
Zinc melts	773	329	412	
Iron bright red in the dark—hydrogen gas burns?	800	341	427	
— red in twilight	884	386	475	
— red heat in daylight	1272	551	700	
Enamel colors *burnt*, or *burnt-in*,* on porcelain,	1392	605	756	6
Bronze melts, [copper $\frac{3}{4}$, tin $\frac{1}{4}$,]	1446	629	786	
———, [copper $\frac{7}{9}$, tin $\frac{1}{9}$,]	1534	668	835	
Diamond burns!	1552	676	845	14
"Orange heat" (Prinsep)	1650	719	899	
Brass melts, [copper $\frac{1}{2}$, zinc $\frac{1}{2}$,]	1672	730	911	
———, [copper $\frac{3}{4}$, zinc $\frac{1}{4}$,]	1690	737	921	21
Bronze melts, [copper $\frac{15}{16}$, tin $\frac{1}{16}$,]	1750	794	955	
Silver melts	1873	818	1023	28
Copper melts	1996	860	1091	
Gold melts	2016	862	1102	
Delft-ware fired	2072	967	1179	40
Cast iron melts	2786	1224	1420	
Cream-colored stone-ware fired	2992	1316	1645	86
Temperature of the maximum of expansion of platinum, being nearly the highest degree of heat attainable in a laboratory wind-furnace,	3280	1444	1805	
Flint glass furnace, greatest heat?	3552	1253	1956	114
Soft iron melts, according to Clement and Desormes, but in all probability an estimate considerably above the truth,	3945	1406	2118	

Mr. Brayley observes, at the end of the table, "The still higher temperatures, derived from the experiments of Mr. Wedgwood, which were here given in former editions of the Chemical Catechism, are now omitted; a comparison of them with the results obtained by Mr. Daniell, by means of his pyrometer, having shown that they cannot be relied upon. Some of the temperatures given in this Table above that of ignition, or 800°, must also be regarded as doubtful, and all of them must be regarded as approximative merely.

*This is a technical term used by enamellers, glass and porcelain painters, &c., to denote the fixing of the colors they employ, by means of vitrifaction, on the substances painted upon.

[From Sir Samuel Moreland's Perpetual Almanac, Ready Reckoner, and Gardener, published in the reign of Queen Anne.]

Directions relating to the Purchasing of Land.

First see the land which thou intend'st to buy,
Within the Seller's Title clear to lie;
And that no Woman to it doth lay claim
By Dowry, Jointure, or some other Name,
That may it cumber. Know if bound or free
The Tenure stand, and, that from each Feoffee
It be released; that the Seller be so old,
That he may lawful sell, thou lawful hold:
Have special care that it not Mortgaged be,
Nor be entayled on Posterity.
Then if it Stand in Statute bound or no,
Be well advised what Quit rent out must go,
What Custom service hath been done of old,
By those who formerly the same did hold;
And if a wedded woman put to Sale,
Deal not with her, unless she bring her Male;
Thy bargain being made, and all this done,
Have special care to make thy Charter run
To thee, thy Heirs, Executors, Assigns,
For that beyond thy life securely binds:
These things foreknown and done, you may prevent
Those things Rash Buyers many times repent,
And yet when you have done all that you can,
If you'll be sure, *deal with an honest man.*

THE WORLD.—The world is now teeming with life in every form. The insect tribes are fully developed, and you can find ample amusement for the leisure hours of your pupils in teaching them to observe and classify them, according to their habitations, their food, their appearance, their useful or injurious effects, and the birds that feed on them. Every hour, every place, almost, will afford some opportunity for remark; and the troublesome housefly, the disgusting spider, and the humble ant, if carefully observed, will afford lessons on animal instinct and divine wisdom, as precious at least as the maxims of the spelling-book, and probably more durable. Can you not procure a microscope, or at least a magnifying glass, to show your pupils the wonderful structure of insects?

The earth is gemmed with flowers and plants also. Encourage your pupils to observe and gather them. Tell them all you know of their names and qualities, and assist them to learn more. If you do not understand Botany, let them compare the forms of the leaves, the number of the petals or flower leaves, their color, texture, and other circumstances; and help them to observe the progress of bud, flower, fruit, and seed. But we can only point you to the book of nature, and leave you to read it by the aid of the proper guides. The garden will be an interesting portion of it; and the exercise of cultivation will cheer and invigorate the little observers.—[Annals of Education.]

Dic mihi, si sueris tu leo, qualis eris?—MARTIAL.
Were you a lion how would you behave?

TEARING DOWN EVERY OTHER HOUSE.—*Mr. Fleet:* In your March number of the Farmer you have told us what you would do if you had Uncle Sam's purse strings. I am inclined to believe the people will not be apt to change the holder of our purse strings: old Hickory and R. B. Taney suit them very well. Your project of tearing down every other house in our cities, towns, and villages, would not suit them very well; and I think it would be impolitic to undertake to compel us all to be florists, gardeners, and farmers. In the Veda, we are told that the Almighty ordaineth that men should follow different callings, that those born with more genius and greater inclination to virtue shall be Brahmans, (or priests;) those who partake most of *rosogun* shall be warriors; those who partake most of tomogun, or avarice, shall be merchants; and those who partake most of cornogun shall be farmers. We seem fond to follow different occupations, and I cannot but think that the best lawgivers have been content to treat things as they found them, and to alter as little as possible what God has made. TYRO.

March 22, 1834.

REMARKS.—"The *best* lawgivers have been content to treat things as they found them."

FARMERS' LIBRARY.—Although four-fifths of the inhabitants of this country are engaged in rural pursuits, yet there is scarcely a collection of books in the country that can deserve the name of an agricultural library. Those of American production are so few, and so limited in their scope, that no library can be formed of them; and most of European works are so expensive, and comparatively so little adapted to the soil, climate, and mode of culture in the United States, that an attempt to form an extensive collection of books from this source would result unsatisfactorily.

The Editor of the Farmers' Register, published at Richmond, in Virginia, proposes to remedy the evils under which the agricultural community labor. His facilities for obtaining information, and executing such a work, and his practical and theoretical knowledge, afford all those recommendations that should insure from the public a ready and a liberal patronage. From the May number of the Register we abridge the following:

The present duty on English books, imported for sale, is 30 cents the pound, (weight,) if bound, and 26 if in boards; and the tax, together with the high cost, serves to make importation for sale too hazardous to be undertaken, except irregularly, and under some peculiar circumstances—and the farmers of this country continue to be deprived of all the light and instruction that might be derived from that source.

It may be said that it is impossible that the former duty of 15 per cent. or even double that amount, could materially check the introduction of works of real value. That might be true, if this value was known; but the intercourse which would otherwise have existed, has been so completely prevented, that it is almost impossible for a farmer in Virginia to know how to select foreign agricultural works, for his own use—or a bookseller, for the purpose of selling again for profit. Perhaps in no department of literature (if that term may be so applied,) is there so much of worthless trash, compared to what is valuable, as in the whole mass of works on agriculture: and the purchaser who selects them at hazard, or merely by the titles, will, nineteen times in twenty, obtain a very poor remuneration for their cost. Neither will the name of the author be a much safer guide. Some of the best informed agricultural writers (as Marshall and Young,) whatever were their merits, were regular *book-makers*—and instead of aiming to furnish the best ideas, and the most instruction, in a form as much condensed as the subject admitted, it was their object to spread their matter through as many pages as possible, and to present the same in as many different works as their booksellers would buy, and their readers would tolerate. Besides, in addition to the risk of buying a worthless book, the American importer had the certainty of having a very high priced one, owing to the fashion in England of publishing most books in a very expensive form. For example—our copy of Dundonald's Connection of Chemistry and Agriculture was obtained by sending a special order to Philadelphia, and cost $7.25. It is a thin quarto, without plates, and containing only two-thirds as much matter as a single number of the Farmers' Register—and therefore could be furnished by republication in that work, at a cost of about 30 cents. The only copy of Elkington on Draining, that we have seen for sale in Virginia, was bought at $5; this work contains about as much as one of our numbers, and might cost 60 cents, on account of a number of plates being required.

The prohibition of supply caused by the combination of the different causes mentioned, has finally operated to produce a cessation of all effectual demand for foreign works on agriculture. This is sufficiently proved to be the opinion of our booksellers, by their not republishing such works for sale. But though they may be, and probably are, correct in this respect, there is still a cheaper form and manner of publication, by which agricultural works may be furnished, viz.: in periodical numbers, and upon previous subscription. If this was done, for example, in monthly numbers of the form and size of the Farmers' Register, about thrice as much matter would be given for the same price, as is done in most American editions of such works—and from five to ten times as much as many English editions furnish. In this manner, a choice collection of standard agricultural works could be obtained, at a price so low as to be within the means of almost every industrious farmer—and yet presenting what would be in intrinsic value, in number, and also in neatness of mechanical execution, a better collection than the most wealthy and liberal have yet been able to procure.

It is not pretended that every volume thus published, however carefully chosen, could furnish either instruction or entertainment to every one, or even to the majority of subscribers. Many of the most valuable works are for reference, and not intended for regular reading, and no mode of selection could possibly suit every reader. But even if it should happen that three-fourths of the whole matter thus furnished should be as useless, and as little read as (necessarily) is as large a proportion of almost every newspaper, the remainder would amply repay the cost. Independent of individual advantage, the wide dissemination of such works, at this cheap rate, would be a general and public benefit, towards which public-spirited citizens might contribute for the promotion of the prosperity of their country, without danger of being mistaken in the result; and still more may be hoped from the patronage which may be offered, from similar views, by agricultural societies, and by the different legislatures of the United States.

Since writing what is above, the arrival of some works lately purchased in London, permits the following comparison to be made of the present English prices with those of the proposed republication. The works are not cited as possessing peculiar value in this country, but because their cost and amount of contents are known.

Radcliff's Agriculture of Flanders cost in London thirteen shillings sterling, or at the usual rate of exchange with this country, $3 12, without counting the duty, or any other charges on the importation. This might be republished in 72 pages of the Farmers' Register, and at the cost (to subscribers) of 47 cents.

The Complete Grazier (6th edition, 1833,) cost 17 shillings, or $4 08, in London. This work would fill 220 such pages as those of the Farmer's Register, and might be published in like manner for $1 50.

The most esteemed agricultural periodicals now in the course of publication in England, are the Quarterly Journal of Agriculture, and British Farmers' Magazine. The price of the former was six shillings the No., in London, and of the latter, four shillings—or $9 60 a year for both, omitting (as before) the duty, and other charges on importation. Both of these periodicals can be published entire, in less than two-thirds of one volume of the Farmers' Register, and might be furnished to subscribers for $3 a year for both.

These statements of prices will best show what may be gained by subscribers to the republications proposed. The plan has been long in contemplation; and, accordingly, proposals to publish the Farmers' Library will be issued without more delay.

TO PRESERVE VINES AND PEACH TREES FROM MILDEW, GREEN FLY, AND SCALE.—Slake two pounds of roach lime with about six gallons of water; after it has stood sixteen or eighteen hours, I pour off the pure water, and mix it with four gallons of soap suds. I syringe with this mixture at the time I put on the sashes, and again when I begin to force. Should either mildew, scale, or green fly, make its appearance, I syringe repeatedly, often three times a day, choosing the hottest part of the day, in order to produce a vapor in the house; and this I continue until the fruit is nearly full grown; it must be discontinued, however, as soon as the fruit begins to change, lest it might impart a disagreeable appearance to them.—[Irish Farmer's and Gardener's Magazine.]

RED ROOT.—Mr. Goodsell, in his Genesee Farmer, gives the following account of this injurious weed:

Red Root, or Gromwell, is an annual plant, growing about two feet high, quite branching, the branches thickly set, with small lanceolate leaves—which are rough like those of common Comfrey. It flowers in May and June. The flowers are axillary, small, white, and followed by small cone shaped, dark brown seeds, which grow naked, and have the appearance of small stones, from which circumstance it is sometimes called stone seed. The roots of the plant are of a beautiful red, and readily impart that color to the skin on being rubbed, and it is from this property that it is so commonly known as red root.

This plant which is described as an annual by cultivation becomes a biennial, as, when sown in the fall, it survives the winter, and is in flower in May, and when sown in May it will be in flower in June, and the seeds ripen sufficiently early to vegetate in the fall, and in this manner it is capable of increasing with astonishing rapidity.

Much has of late been written, and more said, respecting Canada Thistle, but the evils resulting from their introduction into this wheat growing district, compared with that of Gromwell, would be light.

In most instances the seeds of the plant have been imported with clover seed, and mostly from Pennsylvania. It therefore becomes important that farmers purchasing seed brought from the south, should examine it closely, and where any of it is detected, it is better to burn the clover seed than to run the risk of having any of the Gromwell spring up.

When farmers discover any of the plants in their fields, they should be pulled up, and burned before any of the seeds are sufficiently ripened to vegetate, and where they have commenced growing upon commons, or on lands occupied by those who neither take any care for themselves or for the public, the destruction of it should be made a common cause by every friend of agriculture.

The best method of eradicating this plant when first introduced into a field is that of pulling before the seeds ripen, but when it has been allowed to increase, summer-fallowing with frequent ploughings must be resorted to, which if properly conducted will cause most of the seeds to vegetate, and destroy the young plants after they have vegetated.

VEGETATION OF THE PAMPAS OF SOUTH AMERICA.—The great plain of the Pampas, on the east side of the Cordilleras, is about 900 miles in breadth, and the part which I visited, though under the same latitude, is divided into regions of different climate and produce. On leaving Buenos Ayres, the first of these regions is covered for 180 miles with clover and thistles; the second region, which extends for 450 miles, produces long grass; and the third region, which reaches the base of the Cordilleras, is a grove of low trees and shrubs. The second and third of these regions have nearly the same appearance throughout the year, for the trees and shrubs are evergreens, and the immense plain of grass only changes its color from green to brown: but the first region varies with the four seasons of the year in a most extraor-

dinary manner. In winter, the leaves of the thistles are large and luxuriant, and the whole surface of the country has the rough appearance of a turnip field. The clover in this season is extremely rich and strong; and the sight of the wild cattle grazing in full liberty on such pasture is very beautiful. In spring, the clover has vanished, the leaves of the thistles have extended along the ground, and the country still looks like a rough crop of turnips. In less than a month the change is most extraordinary; the whole region becomes a luxuriant region of enormous thistles, which have suddenly shot up to a height of ten or eleven feet, and all in full bloom; the road or path is hemmed in on both sides; the view is completely obstructed; not an animal is to be seen; and the stems of the thistles are so close to each other, and so strong, that, independent of the prickles with which they were armed, they form an impenetrable barrier. The sudden growth of these plants is quite astonishing, and though it would be an unusual misfortune in military history, yet it is really possible, that an invading army, unacquainted with this country, might be imprisoned by these thistles before they had time to escape from them. The summer is not over before the scene undergoes another rapid change; the thistles suddenly lose their sap and verdure; their heads droop, the leaves shrink and fade, the stems become black and dead, and they remain rattling with the breeze, one against another, until the violence of the pampero or hurricane levels them with the ground, where they rapidly decompose and disappear; the clover rushes up, and the scene is again verdant.—[Capt. Head's Travels.]

EMBANKMENT OF A PART OF THE SANTEE SWAMP.

Mexico, S. C., Nov. 23, 1832.

Dear Sir,—Dr. Ravenel informs me you wish some information relative to my embankment, which I comply with pleasure. I commenced the work in 1817. It being generally believed to be a fruitless attempt, I resolved not to be much of a loser by the experiment, therefore only bestowed labor when it could be conveniently spared, viz. between hoeing and harvest, and between planting and hoeing, (never planting a smaller crop than usual,) the expense, therefore, was only that of the spades and wheelbarrows. I moreover have settled almost entirely two plantations in that time, without purchasing any of the materials—add to that, I have been unfortunate in there having been several extraordinary high freshets during the time I have been at work on it, and received great injury three times, adding as much labor as I could bestow in as many years. The land is well calculated for a work of the kind, and commences at the high land. I fortunately passed but one place where the natural surface was injured when the bank broke; in that place there was somewhat of a quick-sand, and it was the only one which broke where the water did not get over the bank—the breach was 60 yards in length, and 24 feet deep. Not despairing, I made a bank 260 yards in length, and where it crossed the same creek, I dug a large ditch, (I suppose about 60 feet length,) and filled it with clay 8 feet deep, before I would venture to make the bank; it has withstood three much higher freshets than that which broke it.

The bank is four miles and a quarter in length, from 9 to 13 feet high, the width from 30 to 50 feet at the base. I finished the bank in September last, and expect to continue to improve it as long as I live. I have persevered notwithstanding the difficulties and discouragements I have had. As was natural, experience was wanting in some measure, which could not be foreseen. For instance, although the level was correct, the water from the course of the river would rise higher in some parts than in others, hence some of the breaks. To meet the difficulty, I took the level of the water during the height of a high freshet, and made the bank to correspond at such places. I consider that I have succeeded, as I do not think my losses have amounted to more than one entire crop, that I usually plant on that land. The quantity of land enclosed is about 1300 acres. I have been thus minute, after stating the great length of time I have been engaged, as it would be discouraging to others to attempt it.

I will add one more circumstance: I never, in any one day, had more than thirty hands employed on it.

I remain, with great respect, dear sir, yours, &c. SAMUEL PORCHER.—[South. Agri.]

MACHINE FOR EXCAVATING EARTH.—Mr. G. V. Palmer, of Worcester, has been ten years and upwards engaged in constructing an extraordinary engine to excavate earth, &c. for which he has taken out a patent. This engine works by steam, and is particularly adapted for cutting canals, levelling hills for railways, and removing large masses of earth. The engine cuts, at a single blow, six feet in width and three feet in depth—delivering on either side, or into carts, one ton and upwards per minute: it also cuts and sifts gravel in the same proportion for road-making. We understand it is of great simplicity of construction, and the weight of the engine does not exceed three tons.—[Manchester Courier.]

INSECTS ON APPLE TREES.—In many parts of the country, apple trees are much injured by small insects upon the bark, which are most commonly denominated lice.

These insects, soon after they are hatched from the eggs, construct a covering over themselves upon the bark, shaped somewhat like the one-half of a flax seed, of a light brown color, which is capable of defending them from the weather, and also from many external injuries, which might otherwise destroy them. Beneath this shelter the parent insect supports itself, by perforating the bark through to the sap, or young and tender part of the year's growth, upon which it feeds until the season arrives for its metamorphose, when it changes shape, and deposites the eggs for the next generation and dies. These eggs hatch about the last of May, or from that time until the middle of June, according to the weather, after which they emerge from the shell made by the parent, crawl a short distance, generally upwards, fix themselves upon a smooth place on the bark, and in turn commence building each a shelter for himself, perforating the bark, and feeding upon the sap as before. By cutting beneath them with a sharp knife, a small brown speck will be discovered, indicating their perforation; and when they are very thick, the whole bark appears when cut much injured, and of a brown color.

From the time of the hatching of the eggs until they have formed their covering, they are easily destroyed, either by washing the trees thus infested with soap suds, or by washing, and at the same time rubbing the tree with a brush, a coarse rag, or something of the kind, by which most of the insects will be destroyed by force, and those detached without being injured by force will be destroyed by the solution. Strong ley will answer the same purpose. Soft soap is sometimes used alone, which answers the double purpose of destroying the insects, and acting as a manure for the trees, as it is carried down to the ground by continued rains.

In applying soap or ley to fruit trees for the destruction of insects, it should be applied as far up the branches as possible without getting it upon the leaves, as when of sufficient strength for the desired purpose, leaves would be injured by it.

Some make use of lime instead of soap or ley, applying it as a white wash: this gives the bodies of trees a very neat appearance, and no doubt prevents the ascent of many insects, as well as the multiplication of others; but we do not think it so effectually destroys the small insects alluded to as the other applications.—[Goodsell's Genesee Farmer.]

MANGOLD WURTZEL, OR FIELD BEET.—We are happy to find that farmers are awake to the cultivation of this crop, and so great has been the increase of demand for seed, that it has been impossible at all times to procure a supply, We have already had calls for ten times as much as was called for the last season, and all who cultivated it the last season are anxious to increase the quantity this. One farmer who has been longest in the cultivation of it, is putting in sixteen acres—and speaks of it as the most profitable crop he has ever cultivated.—[Goodsell's Farmer.]

HOEING CORN.—After such an unfavorable spring as we have had this year, the hoeing of early planted corn is rather a disagreeable employment than otherwise.

When the soil is of a clay loam, and was early ploughed and planted, after which were heavy rains, and the soil has become hard, and the corn looks pale and sickly, it is often abandoned as not of sufficient promise to compensate for the labor of cultivation; but young farmers should remember, that after they have done their duty by carefully ploughing and hoeing, much depends upon the weather, during the months of July and August, for producing a good crop of corn, and although the plants may continue stinted during much of the month of June, yet if the ground is kept in good condition, a fine crop may be realized.

Many are apt to say, in case of dry weather, during the month of June, "that the ground is so dry that it will do corn more hurt than good to hoe it." Never mind, if the ground is dry, stir it the more, it is the best way to guard against drought; in short, do not neglect hoeing, for stirring the ground without manuring is better than manuring without stirring.—[Goodsell's Genesee Farmer.]

MIXTURE FOR CATTLE AND SHEEP.—It has been recommended, by a gentleman who tried it, to mix salt with unleached wood ashes, in the proportion of one quart of fine salt to one half-bushel of ashes, and place the mixture under cover, where the animals can have access to it. This composition, our informant said, preserves the health of the animals, increases their appetite, and he believed would preserve sheep against the rot, and horses against botts.

ARGUMENT TO CLEAN THE TEETH.—To warn the young reader of cleanliness, a subject or two, which, if not very pleasant to discuss, may lead to effects important to future health. No animalculæ are found in the saliva, but numbers of different kinds may be discovered in the whitish matter sticking between the teeth; it it be picked out with a needle, or point of a tooth-pick, and mixed with a little rain water, and applied before the microscope, numbers will be visible; sometimes, indeed, so very numerous and active, that the whole mass appears alive. The largest sort, but few in number, move very swiftly; the second sort are more numerous, and have different motions; the third kind are roundish, and so minute, that a grain of coarse sand would equal a million of them in bulk! They move so swiftly, and in such multitudes, that they seem like swarms of gnats or flies. Some or all of these three kinds may be found in the matter taken from between the teeth of men, women, and children, especially from between the grinders, even though they wash their teeth with great care. But from the teeth of persons inattentive to cleanliness, the matter affords another sort of animalculæ, in the shape of eels. They all die, if vinegar be applied; hence it has been concluded that a gargle of vinegar is good to preserve the teeth and gums from injuries these little creatures might occasion.—[Shaw's Microscopic Objects.]

The Common Strawberry is a natural dentifrice, and its juice without any preparation dissolves tartareous incrustrations on the teeth, and makes the breath smell sweet and agreeable.

LOCUST GROVE.—Extract of a letter to the Editor, dated Long Island, June 18, 1834.

"Had a delightful ride—passed Mr. W.'s place—admired it very much for its neatness, and for the impression of rural enjoyment which it conveys—rode through a locust grove, belonging to Mr. B., of eight or ten acres. This, and indeed the greater part of the Island, is becoming distinguished for a successful culture of this beautiful and valuable tree. A grove of locust is, without doubt, one of nature's most lovely and delicate productions."

HUSSEY'S REAPING MACHINE.—*Mr. Fleet:* I omitted to write you from Genesee, as I proposed; it was through haste that I neglected it. I can now inform you that I left my grain cutter at Moscow, in Livingston co., on the Genesee river, in care of Dr. Wm. C. Dwight, Mr. Horseford, and Mr. Holmes; and under the especial direction of Mr. Holmes, these gentlemen have entered very spiritedly into the business, and will give the machine a thorough trial in the coming harvest, and will use efforts to give it an extensive publicity previous to the time of trial. I am now preparing to leave here for Illinois to operate with a machine which I have there. Another will be in use in this vicinity at the same time.

You will probably have early notice of its success or failure, as the case may be.

Yours, with much esteem,
OBED HUSSEY.

Cincinnati, May 19, 1834.

FLESH COLORED CLOVER.—Dear Sir: I notice the Genesee Farmer has not published my letter correctly. Please insert this correct one in your paper. Yours, very respectfully,
WM. R. PRINCE.

May 27, 1834.

Linnean Botanical Garden, May 10, 1834.

To L. TUCKER, Esq., Editor of the Genesee Farmer.

I perceive brother Buel hints in your paper of the 3d instant, that myself and brother Fleet, of the New-York Farmer, are in error in applying the term "flesh colored clover" to the *Trifolium incarnatum.* Query,—What is the import of "incarnatum?" Loudon's Hortus Britannicus, page 298, says "flesh colored." Consequently this European plant came to our shores with an European title. Deeming, however, from an actual inspection of its flowers, that they might with more justice be termed *crimson*, it was announced in our catalogues distributed the last autumn, as the "crimson, trefoil, or trifolium incarnatum;" and some flowers just plucked confirm that appellation. With brother Buel, however, the plant appears to have changed its color, he now announcing it as the "scarlet flowering clover," whereas in this latitude not a particle of scarlet can be perceived. Surely there must be witchery in friend Buel's land! Yet, wondrous strange as this appears, it is certainly not more than many other recent transpositions in and about Albany. But, I beg pardon! All amazement vanishes when we recal to mind neighbor Buel's statement, published some time since, that on his farm the order of nature loses its limit, and *wheat miraculously changes to chess!*

Yours, most respectfully,
W. R. PRINCE.

REMARKS.—At page 185, we stated that we had known this clover to be called crimson only in one foreign publication. We presume, from the above, that it was Messrs. Prince's catalogue where we saw it thus named.

MATERIALS FOR CORDAGE.—Dr. Perrine, American Consul at one of the Mexican ports, has asked of Congress a grant of land in the peninsula of Florida, for the purpose of introducing and cultivating the Agave Americana, (the famous centennial Aloe,) which he recommends as a material for cordage. It is indeed much used for that purpose in Mexico and South America, where its growth is spontaneous. There is no doubt that this plant would do well in any part of the peninsula of Florida, for it bears the winters at Charleston, S. C., and at Augusta, Geo. If, however, its cultivation is likely to prove profitable, I see no reason why Congress should be asked to *give* lands for the purpose; and if not, we had then better let it alone.

If any additional material for cordage is requisite or desirable in this country, we have one in a native plant, probably not inferior, for that purpose, to the Agave Americana. I allude to the Yucca filamentosa, which grows spontaneously in light sandy soils, (and often on the very poorest,) from Virginia to Florida, and is commonly known under the name of Bear Grass, and sometimes under that of Silk Grass. The fibres of this plant are remarkable for their strength, and I have seen ropes made of it equal in strength and appearance to any other. To obtain the fibres, the leaves are "rotted" in water, or by burying them in the earth. Mr. Elliott, in his "Sketch of the Botany of South Carolina and Georgia," says of this plant, that it appears to possess the strongest fibres of any vegetable whatever; and, if it can be raised with facility, may form a valuable article in domestic economy. The root is also a substitute for soap in washing woollens.

Of the facility of its production, I entertain no doubt. No plant is more hardy, or bears transplanting better. Its roots are extensive, having numerous eyes, or buds, and each one of these will produce a plant. There are millions of acres in the southern states unfit for the ordinary purposes of agriculture, which would produce this plant very well. H. B. C.

REMARKS.—The above is from the Farmers' Register. Dr. Perrine does not ask Congress to *give* a tract of land. He wishes to be authorized to make a settlement, and proposes a remuneration that shall be considered most beneficial to the public. The unsettled state of the titles to much of Florida lands makes this course expedient.—[ED. N. Y. FARMER.]

EFFECTUAL SECURITY AGAINST THE BEE MOTH.—As soon as your bees commence working in the spring, examine your hives, and with a slab of wood, or piece of hoop iron, scrape the stand immediately under the hive, also around the inner edges of the box, taking care to remove all the web that may be attached to any part of the stand or hive, as the whole secret consists in keeping them free from the web formed by the moth or fly. Having completed this operation, provide yourself with four square blocks of wood, and place one under each corner of your hive, so as to raise it not quite half an inch from the stand; this will enable you to clean the stand without removing the hive. This scraping operation must be repeated every three or four days, if there should be any appearance of web forming on the stand, or around the inner edges of the hive. It seems necessary to remark that the moth or fly makes its attacks by a kind of regular approach, first forming its web on the stand, and then extending it up the sides of the hive until it gets complete possession. By a little attention in cleaning the stand and hive, as directed, you will certainly secure your bees from the ravages of the worm. In the winter, the blocks must be removed from under the hive, so as to allow it to rest immediately on the stand, which will secure it against the attacks of mice, &c. On this plan, it is advisable to make an entrance for the bees by cutting a perpendicular slit, in the front of the hive, half way from the bottom, say two and a half inches in length, and one-eighth of an inch wide, with a kind of a shelf just under it, to serve as a resting place for the bees going and returning to the hive. After being a little used to it, the bees seem to prefer this entrance to the one at the bottom of the hive. This plan has proved an effectual security against the worm, after every other remedy has failed; and not a single hive has been lost since it was adopted. Z.

GAMA GRASS.—George Landvoigt, gardener to the establishment connected with the Farmer and Gardener, has succeeded in sprouting the Gama Grass Seed in four days, by a method we believe to be entirely new; and from its complete success in this instance, it is a plausible conclusion that the same method will be found equally beneficial in forwarding the vegetation of other seeds. The gama grass seed has always been very slow in vegetating, and in some instances has lain twelve or fourteen months in the ground before the young plant has made its appearance.

His plan of treatment was this: Take proof spirits one quart, plaster of paris a double handful, or sufficient to make it of the consistence of thin white-wash; set it by the fire and keep it milk-warm for twenty-four hours; then sow it in ground well prepared, and protect it from the heat of the sun in a hot day, or from the cold of such nights as we have had during this experiment, by a grass mat.

By this method the seeds sprouted and came up in four days; and have continued, notwithstanding the extremely cold weather we have had, to grow finely. Plants thus raised are to be set out at a distance of two feet each way, and in a short time the ground will be entirely covered with the grass.

It is highly probable that thorn seed, peach stones, and all other seeds covered with hard coats, may be sprouted in the same way, with greater facility and certainty than they have heretofore been done.—[Farmer and Gardener.]

PLANTS IN INDIA.—Baron Hagal, the Austrian botanist, who lately visited the Neilgherry Hills, in India, declares that the unknown varieties of trees and shrubs, existing there alone, exceed 10,000. The wild rose runs up to the top of the highest trees, and grows to the thickness of four or five inches. A delicious specimen of orange, but not exceeding a filbert in size, is also found there. In the orange valley below Kotagherry, about 4,500 feet above the level of the sea, numerous fruit trees are found, amongst which are the wild fig and lemon tree, the latter bearing fruit little inferior in size and flavor to that of Spain.

HORSES IN BRAZIL.—The great increase of these animals, in a land where none of the same genus had existed before the discovery, altered even the physical features of the country. The bulbous plants and the numerous kinds of aloes, (pitas, or caraguatas,) with which the plains were formerly overspread, disappeared; and in their place the ground was covered with fine pasturage, and with a species of creeping thistle, hardy enough to endure the trampling by which the former herbage had been destroyed. The insect, as well as the vegetable world, was affected, and the indigenous animals of the country, birds, as well as beasts of prey, acquired new habits. —[Southey's Brazil.]

NEW WAY TO CATCH FISH.—We were much pleased with a story told us the other day, respecting the method sometimes adopted to catch trouts in the lakes in the back part of this State. A steel trap is taken, and a piece of pork is tied upon the plate, the trap set and lowered down in the water. His troutship, who is not always eager to bite, but often prefers smelling and nibbling a little before he makes the fatal grab, comes up to reconnoitre, and while, according to his custom, he is turning the pork over with his nose, he springs the

trap upon himself, and is drawn up, nabbed like an unlucky rat, by his head and shoulders.—[Maine Farmer.]

PECULIAR BREED OF SHEEP IN THE NEPAL COUNTRY.—The huniah is a large tall breed, with slender, compressed, spirally-twisted horns, and short narrow tail. Though now naturalized in the Kachar, it is of trans-Himalayan origin. The color is almost invariably white. Individuals of this species are apt to have three, four, and even five horns. The huniah cannot bear the heat of Nepal south of the northern division, and will doubtless flourish in England, where the experiment is making of naturalizing it. Its wool is superb. —[Journal of the Asiatic Society of Bengal.]

FIRE BLIGHT.—Pear trees require but little pruning comparatively with the apple; and if carried to excess, it proves very injurious This agrees well with Coxe's directions, which we copy: "From the great vigor and rapidity of vegetation in America, pear trees if much pruned are apt to grow too fast. This appears to render them more liable to the effect of the fire blight than otherwise they would be. I have therefore changed my mode of trimming them under this impression, confining it very much to suckering, and merely forming the tree. Our heat and dryness do not require the growth to be so open as in Europe.

Pear trees have of late years been subject to a malady commonly called *fire blight* or *brulere*. During the months of June and July, the extreme branches turn black, as if *burned*, and suddenly perish. From the extreme branches the *disease* extends downwards to the larger limbs, and continues to increase until in some instances the tree is entirely destroyed; and what is very singular, trees, while in a healthy and highly luxuriant condition, and loaded with fruit, are so suddenly seized, that they put on this deadly appearance in one night, or in 24 hours, without any apparent cause. Various are the causes assigned by different writers. A writer in the New-England Farmer, vol. ii, p. 42, says, on the first appearance of the disease on his trees, being convinced that it was the effect of some internal enemy, he instantly sawed off all the limbs affected. He found the enemy *not at the point* where death ensued, but *some inches below it*. The insect was very small, but had eaten a complete circle of the alburnum or sap wood, not exceeding the size of a knitting needle, so as completely to intercept the passage of the sap. Having produced the affected limbs and the insects to the inspection of the late Professor Peck, he was led to investigate the subject: and ascertained that the insect is the Scolytus pyri; and in the Massachusetts Agricultural Journal he has given a particular description of the insect, with a plate. It deposits its eggs *between the bud and the stem* before the month of August is passed. After the egg is hatched, the grub eats its way through the cap into the hardest part of the wood, and passes through its chrysalis state before the next summer. The late Professor Peck observes that the mischievous effects of this minute insect are observed in June and July; and that *the dead part of the branches should be cut off and burnt without delay, as the insects have not then left them.* The writer above referred to says that, by steadily pursuing the system of cutting off the limbs *many inches below the apparent injury*, and burning them, the insects have been extirpated from his estate."—[Thatcher's Orchardist.]

ON CATERPILLARS. *By G. Webster, Albany.* —From my experience, I am fully satisfied our fruit trees may be preserved from that dreadful insect, the caterpillar, in a very sure and easy way. In the year 1804, the large elm at our corner was nearly stript of its leaves by a small caterpillar. Various modes to destroy them were made use of, such as covering the trees with tar, fish oil, and drowning their nests, but without any good effect. Some day in the month of July, I was standing at our door, when a gentleman from Niskayuna was passing by. He accosted me in words like these: "George, 'tis a pity to lose so fine a tree." In answer— "We made use of various articles to destroy them, but without success." "Send," says he, "and get a little sulphur, and bore into the tree about six inches, and fill it with sulphur, and my word for it, not a caterpillar shall be seen after forty-eight hours." "Will you stay and see it done." "I will," says he. The hole was bored, the sulphur put in, and a piece of wood the size of a cork drove in strongly, to prevent the sap or sulphur oozing out. In a less time than he mentioned, there was not the vestige of a caterpillar on the tree. Soon after, a large caterpillar appeared on our poplars, in front of my house: every tree was served in the same way as the elm had been, and the result the same—while my neighbors cut down those fine trees, because they were very much alarmed that the insect was that very venomous reptile called "the asp." A few days afterwards I discovered that a very beautiful plum-tree in my yard was attacked by the caterpillar; the same course was pursued, and the result the same. I have followed this practice every year since 1805, when I discovered these insects on my trees, and never has there been a caterpillar on my trees after forty-eight hours. It has been tried in New-York and Pennsylvania, where I have been present, and in the western parts of this state. In no case has it, to my knowledge or belief, failed Two men are sufficient to go through an orchard or forest of 200 trees in a day.

P. S.—I have a strong presentiment in my mind, that if applied to our peach, plum, or cherry trees, it would prevent the black rust.

[We tried this experiment on cherry trees in Cesar-creek township in this county, in the month of June last, and found that in less than forty-eight hours there was not a worm on the trees; nor did they return.—Ed. Ind. Whig.]

AMERICAN TONNAGE.—From the Report of the Secretary of the Treasury recently made to Congress, the Registered, Enrolled, and Licensed Tonnage of the United States amounts to 1,439,450 21-95 tons, divided among the States and Territories as follows:

	Tons.	
Maine,	192,714	63-95ths
New-Hampshire,	17,126	54 "
Massachusetts,	395,924	23 "
Rhode-Island,	40,907	22 "
Connecticut,	52,878	79 "
Vermont,	1,531	4 "
New-York,	319,209	80 "
New-Jersey,	33,143	53 "
Pennsylvania,	88,162	11 "
Delaware,	13,265	64 "
Maryland,	80,705	70 "
District of Columbia,	17,225	3 "
Virginia,	43,877	55 "
North Carolina,	32,142	17 "
South Carolina,	15,560	75 "
Georgia,	8,651	45 "
Ohio,	9,683	72 "
Tennessee,	3,047	1 "
Michigan,	1,753	74 "
Alabama,	7,210	31 "
Mississippi,	925	43 "
Louisiana,	61,171	73 "
Florida,	1,911	28 "
Key West,	1,091	72 "

It will be seen that New-England owns nearly one half of the whole tonnage of the country. Massachusetts owns more than one-quarter, and has the largest amount of tonnage of any State in the Union, having upwards of twenty-six thousand tons more than the State of New-York.

We give from the same Report a view of the tonnage for each year from 1815 to 1832 inclusive. It will be seen that, from 1828, the date of the Tariff law, to 1830, there was a very extraordinary falling off of the shipping interest; and that in 1831 and 1832, after the opening of the West India Trade, and the settling of the tariff question, there has been a gradual increase.

	Tons.	
1815,	1,368,127	78-95ths
1816,	1,372,218	53 "
1817,	1,399,911	41 "
1818,	1,225,184	20 "
1819,	1,260,751	61 "
1820,	1,280,166	24 "
1821,	2,298,958	70 "
1822,	1,324,699	17 "
1823,	1,335,565	68 "
1824,	1,389,163	2 "
1825,	1,423,111	77 "
1826,	1,534,190	83 "
1827,	1,620,607	78 "
1828,	1,741,391	87 "
1829,	1,260,977	81 "
1830,	1,181,776	43 "
1831,	1,267,846	29 "
1832,	1,439,450	21 "

[Boston Post.]

PUBLIC REVENUE IN NEW-YORK.—Revenue accrued in the District of New-York for the 1st quarter, ending the 31st March, 1834, $3,148,455 87. First quarter, 1833, $3,123,166 81. Increase, $26,289 06.

These facts we have ascertained at the Custom House this morning. When it is considered that on the 3d of March, 1833, the entire duty on tea, coffee, most kinds of spice, and a great many other articles, was abolished,—and that on the 31st December, 1833, all duties on linens, linen cambrics, worsted stuff goods, manufactures of silk and worsted, and of silk coming from this side of the Cape of Good Hope, were abolished, and that, on all goods of every description, one-tenth of the excess above 20 per cent. ad valorem was repealed on the same 31st of December, 1833, the above results appear to us very surprising.

They are, however, in perfect accordance with the fact which we stated a day or two since, that the number of arrivals at this port from foreign countries has been greater by 44 during the first quarter of the present year, than during the corresponding quarter of 1833, and greater than ever before, unless possibly in 1816 and '17, immediately after the war.

The reader will observe that the revenue above stated is the revenue *accrued* (not *collected*) during the quarters mentioned; and of course that cash duties and short credits will not affect the amount. They will also bear in mind that the importations of 1833 were uncommonly large, amounting, in round numbers, to $109,000,000.—[Jour. of Com.]

Many of the goods on which the above revenue accrued have been sent back again, and consequently the drawback allowed will subtract from the revenue.

GLASS TILES.—M. Dorlodot, a glass manufacturer, at Anzin, in France, has invented a species of glass tile, of great solidity and transparency, which, it is thought, may be substituted with much advantage in all cases where skylights are now employed. The existing excise laws of Great Britain oppose, however, an insuperable bar to their adoption in this country, unless under circumstances where expense is no object.—[Mechanics' Magazine.]

CURE FOR BOTTS.—I send you a remedy I used while our coals were brought to market in road waggons, which obliged us to use a great number of horses; and I never knew it fail of giving relief in one to five minutes, viz.: Pour half a gill of spirit of turpentine into the hand, rub it on to the breast of the horse while suffering; let it be applied to the hollow or pit of the stomach, just at the point where the neck joins the breast, on a space six to eight inches in diameter. The relief is certain, if the grubs have not already cut through the coats of the stomach.—[Farmers' Register.]

WHEAT.—Eden, in his History of the Poor, says, "about fifty years ago, (this was written in 1797,) so small was the quantity of wheat used in the county of Cumberland, that it was only a rich family that used a peck of wheat in the course of the year, and that was used at Christmas. The usual treat for a stranger was a thick oatcake (called haver-bannock) and butter. An old laborer of eighty-five remarks that, when he was a boy, he was at Carlisle market with his father, and wishing to indulge himself with a penny loaf made of wheat flour, he searched for it for some time, but could not procure a piece of wheaten bread at any shop in the town."

At the time of the Revolution, according to the estimate of Gregory King, 14,000,000 bushels of wheat were grown in England. In 1828, according to the estimate of Mr. Jacob, in his Tracts on the Corn Trade, 12,500,000 quarters, or 100,000,000 bushels, were grown. The population of England at the Revolution was under five millions, so that each person consumed about three bushels annually. The population at the present time is under fifteen millions, so that each person consumes about seven bushels annually.

LOCUSTS.—The Flatbush woods are swarming with locusts, which the warm weather seems to have emancipated from their chrysalis. They are rather smaller than the ordinary green locusts, with black bodies, red eyes, and yellow legs and wings.—[L. I. Star.]

Statistical Facts in relation to the Chesapeake and Ohio Canal. To the Editor of the American Railroad Journal.

WASHINGTON, April 11, 1834.

SIR,—The following statistical facts, in relation to the Chesapeake and Ohio Canal, I have collected from the mass of documents which have been printed by Congress and the Company, and which amount in bulk to several octavo volumes. I have not, either, all of their reports to refer to, as the price of an entire copy of the proceedings of the board of directors and engineers costs now $20 to $25, and many of the papers are very scarce. Such as are given below will, I hope, answer your purpose. Alter them and change them as may best suit your views.

The general convention of Delegates from Pennsylvania, Maryland, Virginia, the District of Columbia, and one or two of the Western States interested, first met at Washington, D. C., in November, 1823, to determine on the proper measures to be adopted in reference to the successful prosecution of this great work of internal improvement. The first charter was granted by Virginia, in January, 1824, which was confirmed by Maryland in January, 1825, and by Congress in March of the same year. Pennsylvania granted her charter with some restrictions, (relative to portions of the appropriations of Congress being applied to the construction of the western section, &c.) in February, 1826. All four of these legislative bodies have since passed various acts, extending and restricting the powers of the Company.

SUBSCRIPTIONS.—Books were opened in 1826, after the confirmation of the charter by the several states.

Private subscriptions, - - - $610,000
By Maryland, in March, 1826, - 500,000
Maryland, in 1834, granted $50,000 additional: $25,000 cash, and the remainder when a further subscription was made by Congress.
By Virginia, in 1833, - - - 250,000
Virginia had subscribed, in 1826, her interest in the Potomac Canal Company, which was then valued at 2 or $300,000.
By Corporation of Washington, - 1,000,000
By Corporation of Alexandria, - 250,000
By Corporation of Georgetown, - 250,000
By Congress, - - - - 1,000,000

The cost, as estimated by the U. S. Engineers on the first surveys, was $22,375,427.69; and, by Geddes and Roberts, the company's engineers, since that time, was $9,347,408.69.

The projected route, (and in its location, thus far, it has deviated very little from the line originally laid out,) was up the valley of the Potomac river, as far as Cumberland; thence it follows the valley of Wills' creek, as far up as the mouth of Bowman's run, from which place it is to cross the summit ridge by a tunnel, railway, or inclined planes, as the company may see fit, the privilege of selecting being granted by their charter. (It is most probable that the company will adopt a railway with stationary power, as it will in the end prove the cheapest and most convenient.) The western course is thence down Castleman's river and the Youghagany, and the Monongahela, to Pittsburgh. (It is doubtful, I think, whether this line, the western section, will be adopted, as the United States have been projecting improvements on the Monongahela river, so as to render it navigable as far as Brownsville, 55 miles by the course of the river above Pittsburgh, and it will be shorter and more convenient to end at Brownsville than its present projected termination.) The total length of this projected route is 341 miles, 676 yards, and is divided into the eastern, the middle or mountain, and the western sections, the former extending from Georgetown to Cumberland, 185 miles, 1078 yards; the middle section, thence to the mouth of Castleman's river, 70 miles, 1,010 yards; and the latter thence to Pittsburgh, 85 miles, 348 yards.

DIMENSIONS OF THE CANAL.—The size of the Erie canal was at first adopted as sufficient for the Chesapeake and Ohio Canal. But this idea was soon abandoned, and the following size determined on: 60 feet wide at surface, 42 feet at bottom, and 6 feet deep, giving a cross section of 366 feet. But for the purpose of giving sufficient water for manufacturing purposes, the first two miles above Georgetown were widened to 70 feet, with a depth of 7 feet, and the succeeding two miles have a width of 80 feet, and 7 feet depth. Between Harper's Ferry and the Point of Rocks, in some few places, and for short distances, it has been narrowed to 50 feet, and above Harper's Ferry it has been widened to 90, 100, 120, and even 150 feet, in several places. The locks are 100 feet long by 15 wide, in the chamber, and 6 feet deep. The tow paths are 12 feet wide, and the berm bank 8 feet. All the culverts, aqueducts, and locks, are built of solid stone masonry, laid in hydraulic lime. Many of the locks are so constructed, by lengthening the side culverts and multiplying their outlets, as to be filled in one half the usual time.

In November, 1830, the sections extending from the Seneca feeder to the termination of the old canal, around the Little Falls of the Potomac, (a distance of 17 miles and 774 yards,) were finished and opened for use. The sections in Georgetown were finished in August, 1831. The sections from the Seneca feeder to the Point of Rocks, (a distance of 26 miles and 363 yards,) were open for use in the spring of 1832, and by the end of 1833 it was completed as far as Shepherdstown, (72¼ miles from Rock Creek Basin, Georgetown.)

Between the Georgetown Basin and the Point of Rocks, a distance of 48 miles, 118 yards, is a rise of 217 feet, overcome by 27 locks: for the lift and distribution of which see table given below. Between the Point of Rocks and Williamsport, (to which the canal will be open from Shepherdstown this spring or summer,) a distance of 66 miles and 762 yards, is a rise of 136 feet, overcome by 17 locks: see table.

No. of lock.	*Lift.*	*Construction.*	*Distance from lock to lock.* m.	yds.	*Total distance from tide lock.* m.	yds.	*Remarks.*
	at l. wat.						
Tide l.	3 ft.	Cut stone. Free stone.					In the locks of 8 feet lift, there are about 1,084 perches of masonry; each 4,426 superficial feet of ashlar (excluding coping and hollow quoins); 436 lineal feet of coping, 1 foot thick by 3 feet wide, making 4 feet of cut work for evry foot lineal; and 61⅜ feet rise of hollow quoins: where the cut stone are exactly of the size required by the specifications, there are 384 perches of cut stone and 700 perches of backing. The quantity of cement for each lock of 8 feet lift, has varied from 3,000 to 3,300 bushels.
No. 1	8	Same as tide lock.		661		601	
2	8	Same.		81½		742½	
3	8	Same.		100½		843	
4	8	Same.		98		941	
5	8	Partly of hammered and partly of cut stone.	4	969	5	90	
6	8	Same. Free stone.		637	5	727	
7	8	Cut, granite, and free stone	1	1075	7	42	
8	8	Red sand stone. Cut	1	594	8	636	
9	8	Granite and free stone. Cut.		604	8	1240	
10	8	Cut stone. Granite.		153	8	1393	
11	8	Cut. Red sand stone.		319	8	1712	
12	8	Cut stone. Granite.		545	9	497	
13	8	Same.		148	9	645	
14	8	Granite. Cut.		148	9	793	
15	8	Red sand stone. Cut.	3	1740	13	773	
16	8	Same.		311	13	1084	
17	8	Same.		618	13	1702	
18	8	Same.		178	14	120	
19	8	Same.		134	14	252	
20	8	Same.		198	14	452	
21	8	Same.	2	623	16	1075	
22	7	Same.	2	1544	19	859	
23	8½	Same.	2	856	21	1715	
24	8½	Same.		1174	22	1129	The masonry of lock No. 24 is connected with the lower abutment of the Seneca aqueduct.
25	8	Same.	8	23	30	1152	
26	8	Same.	8	1137	39	529	
27	8	Same.	2	20	41	549	From lock No. 27 to the Monocacy aqueduct is 1,156 yards—the aqueduct, 172 yards long—thence to the Pivot bridge at the Point of Rocks is 6 miles 1 yard
					48	118	
28	6	Granite transported on Balt. & O. Railroad, and flint (hard white) stone from neighborhood. Cut stone.		1337	48	1415	
29	7	¾ Balt. granite. ¼ hard white flint. Cut.	1	1597	50	1292	
30	8	Patapsco granite 1-7 & red sand stone. Cut.	4	143	54	1435	
31	8	Granite and flint from neighborhood.	3	121	57	1556	The foot of lock No. 33 is connected with the abutment of the bridge over the Potomac at Harper's Ferry.
32	8	Granite & lime stone from neighborh. Cut.	2	332	60	128	
33	8	Lime stone. Cut work.		760	60	888	
34	8	Same.		1556	61	684	The cost of lock No. 35, as well as that of 36, 37, 38, 39, 40, 43 and 44, (8 in number,) was at the rate of $1,120 per foot lift. This was including gates and foundations.
35	8	Same.		1267	62	191	
36	8	Same.		173	62	364	
37	9	Same.	4	909	66	1273	
38	5	Same.	5	1426	72	959	
39	6	Same.	1	287	73	1226	
40	9	Same.	6	447	85	940	
41	10	Hammered stone Lime stone.	6	1740	92	920	The two locks, Nos. 41 and 42, are constructed of Lawrence dressed lime stone; were built for $800 per foot lift, including gates and foundations.
42	9	Same.		200	92	1120	
43	9	Lime stone. 3 miles transported. Cut stone.		200	92	1320	Total lockage, 353 feet, from the Georgetown basin.
44	10	Same.	6	1020	99	580	

Besides the above 44 lift locks, a communication with the river Potomac is to be effected through the guard locks at the entrance of the feeders from the Potomac, and also through the several lift locks designed for the Virginia trade, and constructed in compliance with the Virginia charter. Four of these locks are required to be constructed similar in size and construction to the other lift locks of the canal, viz.: one opposite the mouth of Goose creek, which enters the Potomac, opposite the foot of lock No. 25; another at the Point of Rocks; another opposite Shepherdstown; and the 4th, near the mouth of Opequon. The latter has since, however, been dispensed with, as its purposes are subserved by the transfer of locks Nos. 41 and 42, (which were located 2 miles above the mouth of Opequon,) to 2 miles below the mouth

of that river. (This transfer reduced the slack water navigation, between guard lock No. 3 and lift lock No. 41, from 7 to 3 miles, and increased the expense $100,000. There is also a lift lock in addition to the above constructed, connecting with the Potomac opposite the junction of the Shenandoah with the Potomac at Harper's Ferry, 637 yards above lock No 32. It has 10 feet lift, and is, in other respects, similar to the other locks.

Culverts.—Below the Point of Rocks there are, inclusive of roadways, 59 culverts, of which the total cost was $110,000. Three of these culverts are of 12 feet span each, 2 of 16 feet span each, (one over the Tuscarora, 2 miles above the Monocacy aqueduct, and the other 1 mile below the Point of Rocks,) and 1 of 2 arches of 16 feet span each over the Little Monocacy river: the total number of perches of masonry in these 59 culverts amounts to ——, costing $51,872—32 culverts, nearest Point of Rocks, 11,357, $50,000. Between the Point of Rocks and Harper's Ferry the number of culverts is 19, containing in all 6,839 perches of masonry, and the total span of which was 158 feet. There are, also, above Harper's Ferry, 41 culverts, the estimated price of which was $44,300. The culverts below Harper's Ferry are generally 110 feet long; while above, owing to the contraction in the width of the canal, they do not exceed 100 feet.

Aqueducts.—No. 1. Seneca aqueduct, built of red sand stone from the immediate neighborhood, is 114 feet long between the abutments, which, with the 2 piers, rest on a solid foundation. There are 3 arches of 33 feet each. Cost $22,784.

Aqueduct No. 2. Monocacy aqueduct, built of a white granite stone, (obtained within 3 miles of the site of the aqueduct,) is 438 feet in length between the abutments, and is 516 feet from end to end of the wing walls which project from them. There are 7 arches of 54 feet span each, and 9 feet rise, (segments of circles,) the radius of intradoes of which is 45 feet. It contains 9,788 perches of masonry, (exclusive of the rough walls in which the cut masonry of the wings terminates.) Cost, $125,000.

Aqueduct No. 3 crosses the Catoctin, a tributary to the Potomac; it has 3 arches, a semi-circular, of 20 feet span each, and the third a semi-ellipse of 40 feet span and 10 feet rise, supported on piers, 6 feet wide by 33 feet long, while the parts under water (7 feet in depth,) are 8 by 35, and founded on solid rock. Total cost, $33,500.

Aqueduct No. 4 is over the Antietam, a branch of the Potomac, entering 3 miles above the Government dam above Harper's Ferry. The abutments are 9 feet thick, and 108 feet apart. It has 3 semi-elliptical arches, 2 of 28 feet span, and the 3d of 40 feet span, with a rise of 10 feet each. The foundations of the piers and abutments are on solid rock. Greater portions of them are of cut stone masonry and expensively built. Lime stone from the neighborhood used. The towing path parapet is 7 feet thick at bottom and 6 at top. The berm parapet is 5 feet thick at bottom, and 4 at top. Width of track is 20 feet at bottom and 22 at top. Cost, $22,850.

Aqueduct No. 5 is over the Conococheague, which enters the Potomac at Williamsport. It has 3 arches of 60 feet span each; two piers and two abutments. The piers are 12 feet thick at the base. The arches are 32 feet wide and 15 feet rise.

Tow-path parapet, 7 feet thick at bottom, 6½ at top; berm parapet, 5 feet thick at bottom, 4½ at top.

The walls are raised 7 feet above the bottom of the canal.

Estimated cost, $40,260. Not quite finished in December last.

Feeders.—No. 1. The Little Falls feeder supplies 4¾ miles of canal. An arched stone dam is thrown across the Potomac, and the admission of water into the canal is regulated by a single guard gate, and enters at the foot of lock No. 5. Length of the dam, 1750 feet, height 4 feet. Cost ——. The feeder is a part of the old canal around the Little Falls, constructed previous to 1800.

No. 2. The Seneca feeder supplies 17 miles, although at the foot of lock No. 18, at the Great Falls, an additional supply is received from the Potomac, through a small arch under the towing path. The dam across the Potomac for this feeder is — feet high, and 25,000 feet in length, and cost ——. The water is admitted into the canal through guard lock No. 1. The dam is of stone and arched.

No. 3. The canal for the next 40 miles depends almost entirely for water on the supply it receives from the Potomac at the head of Harper's Ferry Falls. The dam constructed by the Government for the use of the United States armory at Harper's Ferry answers all necessary purposes here, and no more water is drawn off than was formerly used by the old canal, which has been closed since the opening of the main canal. (A small feeder from the Tuscarora, which enters the canal 17 miles below the head of Harper's Ferry Falls, also assists towards supplying this section.) The water from the Harper's Ferry feeder is admitted through guard lock No. 2, situated near lift lock No. 35. This dam is — feet high, and — feet long. Cost of company's works here ——.

No. 4 supplies 23½ miles of canal. The dam across the Potomac is near ————, and is 20 feet high, and 810 feet long, and 60 feet base. The water is admitted into the canal through guard lock No. 3, which is 1 mile 320 yards above the dam. Cost of dam, lock, and other works connected with the feeder, ——

No. 5 feeds 19 miles of canal, and is situated 8 miles above Williamsport. The dam across the Potomac is at ————, and is 20 feet high, 706 feet long, and 20 feet base. The water is admitted through guard lock No. 4, 320 yards above the dam. Cost ——.

Some facts I have not here been able to find out, but which I hope you will be able to obtain, should they be of any service.*

Costs.—The following work, done between the Point of Rocks and the Georgetown Basin:—Common excavation, 1,893,666 cubic yards; Hard pan do., 439,071 do.; Quarry rock do., 75,472 do.; Rock blasted, 398,524 do.; Embankment, 1,533,850 do.; Puddling, 96,092 do.; Walling, 231,064 cubic perches. Costing $1,032,161; for grubbing, $12,892; extras, $40,800.

Extra on this section:—Pier, basin, and tide lock, at Georgetown, $78,943; Locks, $232,642; Lockhouses, $16,315; Bridges, $32,925; Aqueducts, $23,444; Culverts, $51,872; Waste weirs, $8,619; Dams, $30,491; Guard locks and feeders, $15,404; Improvements, $22002.

The masonry on the dams, locks, aqueducts, pay for engineers, officers of the company, &c. are not included in the above. Items given separate.

Work done and to be done from the Point of Rocks to Williamsport—all under contract, and a great portion finished:—Common excavation, 2,733,905 cubic yards; Rock do., 433,752 do.; Slate do., 8,140 do.; Embankment, 1,350,149 do.; Puddling, 37,617 do.; Walling Stone, 181,029 cubic perches. Actual and estimated cost of the above, $936,735.74; for grubbing, $9,653; extras, $8,564.13. Total, $954,952.87, besides the masonry on locks, aqueducts, culverts, bridges, &c. &c.

I have not been able to obtain a full aggregate amount of the expenditures of the company, nor an actual statement of the entire cost of the canal. It has had to meet enormous law expenses on account of its difficulties with the Baltimore and Ohio Railroad Company; besides being subjected to very large losses in the delay occasioned by the injunction of the Chancellor of Maryland in the above case. The right of passage, too, over the various lands of private individuals has cost immense sums.

The pass at the Point of Rocks, held in dispute between the two companies, was $11,153 feet long, or 2 1/10 miles. The distance from Harper's Ferry to Cumberland, according to Geddes and Roberts' report, is 127 miles, and the amount of all the narrow passes where the works would come in collision would amount in all to 45 miles.

The reports of the united engineers, who have been at various times invited by the company to inspect the different portions of the work, are all declaratory of the perfect and substantial manner in which the work has been constructed throughout. These reports, have been called for by Congress, and, on being submitted, have been ordered to be printed. They contain a great deal of information relative to this grand work, and are worthy of perusal. This spring, notwithstanding the many delays and difficulties of the most arduous and imposing nature the company have had to contend with, will see the canal opened some distance above Williamsport, a distance of 102 miles of canal, and 14½ slack water navigation, fully complying with the charter, which required upwards of 100 miles to be completed within 5 years from its commencement, or rather from October, 1828. Some report I have just got hold of, says the entire cost of this construction was $3,650,000, of which $450,000 was expended from Little Falls down.

I can add that the prospects of the canal are truly encouraging. Having command of an extensive coal region, and passing through a highly cultivated valley, where there are also numerous grist and other mills, and abundant mineral resources besides the coal, they can never be at a loss for means of rendering the canal profitable. They cannot experience much competition, either from the Baltimore and Ohio Railroad, on account of the heavy weight of the produce to be conveyed, and cheapness of conveyance on the canal. The Washington city branch of the Chesapeake and Ohio canal extends from the Rock Creek Basin on the western borders of the city to the mouth of Tiber Creek, following the bend of the river Potomac, (being constructed along the bank of that river, and in some few places encroaching on the river itself,) a distance of 1 mile and 373 yards. A tide lock at the eastern termination brings it to the level of the Potomac. The cost of this branch was $25,978.47.

Very little has yet been done on the Alexandria branch of the canal. Congress has made an appropriation of $60,000, I believe, for the construction of an aqueduct at Georgetown, across the Potomac, for the transfer of the canal to the Virginia shore. The length of this branch is 7 miles and 416 yards, and the estimated cost $372,204.55. The aqueduct has been contracted for some time since, and is now in progress of construction under the superintendence of Capt. Turnbull, U. S. topographical engineer. It is 1714 feet long; the canal way is to be 16 feet wide at bottom, 18 feet at top, and 5 feet deep, and thence, to Four Mile run, the size of the canal is to be 32 feet wide at bottom, 50 feet at top, and 6 feet deep. At the embankment, at Four Mile run, it is to be 18 feet wide at bottom, 36 feet at surface, and 6 feet deep. Thence to Alexandria it is to be enlarged to the established dimensions of the Chesapeake and Ohio Canal.

H. N. C.

* We have not been able to fill the blanks.—Ed. A. R. J.

City of Washington, May 27, 1834.

To the Editor of the Railroad Journal:

Sir,—I forwarded, some time since, by a private conveyance, an answer to your letter asking for information relative to the Chesapeake and Ohio Canal, which gave you such statistical information respecting that grand work as I could collect. I am not aware that it has yet reached you, though it has been nearly a month, if not more, since I wrote it. I could not then get a copy of the rate of tolls demanded on the canal, but having since succeeded, I forward them to you. This rate is only temporarily established, and it is probable, ere long, that a more favorable change will take place. Should

you determine on publishing the inclosed, you will be pleased to notice the fact that this arrangement in respect to the tolls is only temporary.

Articles.	*Quantities.*	*Per mile for first 15 miles.*	*Per mile over 15 miles.*
Tobacco,	per ton of 2 hhds.	2 cents	2 cents
Wheat,	" 40 bushls	2	2
Flour,	" 10 bbls.	2	2
Offals,	" 100 bshls	2	2
Corn Meal & Rye chop,	" 40 "	2	2
Oats,	" 80 "	2	2
Flax and Clover Seeds,	" 40 "	2	2
Hemp and Flax,	" 2240 lbs.	2	2
Potatoes,	" 35 bushls	2	2
Hay and Straw,	" 2240 lbs.	2	1
Wood,	per cord of 128 c. ft.	2	1
Bark ("tanner's"),	" " "	3	1
Lumber, Plank,	per 1000 ft. bd. mea.	2	1 cent or if in rafts 2 cents
" Square timber	70 cubic feet		
" Shingles,	3000		
" Lathe,	5000		
" BarrelStaves & Headings,	1000		
" Hhd. Staves & Headings,	500		
Charcoal and Coke	per ton of 56 bushls	2	1 cent
Coal,	" 28 "	1	½
Apples,	" 12 bbls.	2	2
Cider Ale and Beer	" 8 "	2	2
Whiskey and Pork,	" 7 barrels or 2 hhds	2	2
Wine & Foreign Spirits	per tun of 250 galls.	2	2
Live Stock, Cattle,	4 to the ton	2	2
" Sheep,	30 "	2	2
" Hogs,	15 "	2	2
Lime,	per ton of 28 bushls	2	1
Plaster, Stone,	" 2240 lbs	2	1
" Ground,	" 28 bushls		
Stone, Rough,	per ton of 15 cub. ft.	1	½
" Cut or Wrought,	" " "	2	2
" Grind and " Mill Stones,	" " "	2	2
Iron, Pig, Castings, and Bars,	per ton of 2240 lbs.	2	2
Salt,	" 35 bushls	2	2
Fish,	" 7 barrels	2	1
All other articles	" 2240 lbs.	2	2

Boats or scows, either empty or having cargoes, the tolls on which shall not pay 5 cents per mile, shall be charged at the rate of 5 cents per mile, and 3 cents per mile for any additional distance, which shall be considered as in lieu of the tolls on such cargoes.

Boats used chiefly for the transportation of passengers shall pay 10 cents per mile for the first 15 miles, and 8 cents per mile for any additional distance, which shall include the toll on passengers and their customary baggage; but all other merchandize transported therein shall pay the established rate of toll.

The above rates are established for the present for the use of the canal between the city of Washington and Harper's Ferry Falls; and the same rates per mile will be demanded for the use of any portion of the river between the Little Falls and the Harper's Ferry Falls; for the use of the river above Harper's Ferry Falls, the tolls established by the late Potomac Company will be demanded.

The canal is now in active operation, and will soon, I believe, be opened for several miles above Williamsport, where the slack water navigation of the Potomac is used, (for a distance, I think, of upwards of 7 miles,) making in all a distance, from the Georgetown basin, of upwards of 110 miles.

I should like you to have a copy of Dr. Wm. Howard's report on the improvement of the Monongahela River, which is, at present, a favorite project in the western part of Pennsylvania, and one which, if executed, will tend as much as any other work of internal improvement to add to the resources of that region of country, so rich in mineral and agricultural products, and where the arts have attained such perfection. Your obedient servant,

H. N. C.

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* SHEET IRON GIGS.—These gigs are continuing to grow as rapidly numerous as they are increasing in public estimation. A very beautifully fitted up one was this week finished by Messrs. Reid and Hanna, and Messrs. Walker, for the Paisley Canal. Two others are in a state of great forwardness for Dublin; and several others, for various canals, are also in preparation. This business of gig making has extended to Johnstone, also, where there are six or seven of them getting forward for various canals both in Ireland and Scotland. Steam-coaches will find in these gigs most powerful competitors to contend with.

The increase of trade upon all the canals on which they have been introduced is quite astonishing. The bustle at the basin here and at Port Eglinton, by the hourly departure, is quite enlivening, and we understand the travelling by the Forth and Clyde Canal is increased in a most astonishing degree. Indeed, from the speed they have attained, and the low prices charged to Edinburgh, Stirling, Alloa, &c. no other result could be expected.—[Paisley Advertiser.]

IRON WHEELS.—We saw a waggon in Court street this forenoon, which, from the novel construction of the wheels, excited considerable curiosity in the passers-by. They were made entirely of iron—the outer part of the wheel was formed from a single piece of iron about an inch and a half square—the spokes were round, and five-eighths of an inch in diameter. The naves were constructed in a new and ingenious manner, by which the friction is much diminished; and the whole appearance of the wheels conveyed the idea of usefulness, neatness, and simplicity.

On inquiry, we learned that these wheels were calculated to sustain a weight of a ton and a half—and that wheels of the ordinary construction, to sustain so great a weight, would weigh about the same as these newly invented wheels. The expense also, we were informed, will not vary materially from those in common use. They were manufactured by Mr. Hale, of South Boston; and we believe this is the first attempt of the kind to manufacture all the parts of the wheel of iron. The advantages to be derived from this invention are neatness, safety, and durability.—[Boston paper.]

MACHINE FOR MAKING BRICKS.—Messrs. Harkness, Sawyer, and Freelove, have now in successful operation a machine which has excited the admiraton of all who have witnessed its operation. It produces twenty bricks in a minute, and these too, not the unshapely and rough masses of mud, which we usually call bricks, but a square and smooth body of clay, so hard, when they leave the press, that they are fit to set immediately into the kiln for burning.

The moulds (four in number) in which they are pressed are made of polished steel plates—which plates are set in a cast iron box; and the whole banded with strong wrought iron bands. The machinery is so constructed that the mould is fixed in a solid stationary frame; and after the pressure is made upon the clay in the mould, the bottom of the mould rises, and throws the brick to the top, so that it may be conveniently taken off. It is found by experience, that not less than 50 tons pressure upon each brick will answer the purpose. This amount of pressure is, of course, wanted only at the very *last* moment of the impression; or, in other words, can be pressed with very little effort into a space within, say, one-fourth of an inch of the proper thickness. After it is thus far pressed, it then requires at least 50 tons to bring it to a proper degree of density. The machine in question is so constructed as to give this great pressure at the *time it is wanted*, and no other. In fact, it would be difficult to find, in all the mechanical operations now in use, a more perfect adaptation of the *means* to the *end*. And it is thought by many scientific gentlemen, who have examined the matter, that *no other* application of the mechanical powers will ever be made to effect the same object.

It is only necessary that the utility of this machine should be known, in order to introduce it into general use. The beauty and durability which it will impart to the brick buildings of the country must make it an object of great public interest. Add to this, the reduction of expense which must ultimately follow, and I cannot but regard the improvement of the gentlemen above named as of equal importance to any which has been introduced for the last 20 years.

The following *practical* statement, which has been obtained from the patentees, will no doubt interest such of your readers as are engaged, or may feel disposed to engage, in brick making.

A brick press can be put in operation for about $6.

The expense of carrying on the business for a month is as follows:

1st.	6 hands at $10 per month - -	$60,00
	Boarding same at $1,25 per week, -	30,00
2d.	3 boys at $6 per month - -	18,00
3d.	2 horses at $7,50 per month, - -	15,00
4th.	60 cords of wood at 90 cts. per cord,	54,00
	The setting and burning of 180,000 bricks, at 40 cts. per 1,000, - -	72,00
		$249,00

The above are the regular expenses per month of carrying on a horse power press. The press, when in operation, makes 20 bricks in a minute, or 9,600 in 8 hours. Deducting, however, for loss of time and other contingencies, 1-4th for every day's work, leaves the amount of 7,500 bricks per day, or 180,000 per month; which, at $3,50 per 1,000, are worth $630,00. Deduct the expense of making, which is $249, and there remains a clear profit to the owner of $381 per month; or, $1,905 for five months, the time that could be conveniently occupied each season in brick making.

The above estimate is based upon the price of brick, of labor, and of boarding, at Mount Vernon. In many places, labor and boarding would doubtless be more expensive. But in such places, the price of brick would probably be increased in proportion.—X. Y. Mount Vernon, May 15, 1834.—[Ohio State Journal.]

METEOROLOGICAL STONE.—A Finland journal gives an account of a singular stone in the north of Finland, where it answers the purpose of a public barometer. On the approach of rain, this stone assumes a black or dark grey color, and when the weather is inclined to be fair, it is covered all over with white specks. This stone is, in all probability, an argillous rock, containing a portion of rock-salt, ammonia, or salt-petre, and absorbing more or less humidity in proportion as the atmosphere is more or less charged with it. In the latter case, the saline particles, becoming crystallized, are visible to the eye as white specks.

A PETRIFIED PAPOOSE.—Some persons employed lately in quarrying stones at Guernsey, Ohio, came across the body of an Indian child completely petrified. This extraordinary specimen was found embedded in a solid mass of rock, and has the appearance of a stone image, somewhat imperfect, to be sure, yet, on the whole, a very fair outline of a young Indian, done in lime-stone. A small row of Indian beads (too hard originally to need petrifaction, we suppose,) was found in the same cavity.

STEAMBOATS IN THE WEST.—An official list of steamboats on the Western waters, on the 1st of January, 1834, gives the whole number 234, whose aggregate amount of tonnage is equal to 39,000 tons—they have cost three millions of dollars. The total yearly expense of running them is four millions and a half. 66 boats went out of service during 1831, '32, and '33—of these, 15 were abandoned as unfit for service, seven were lost by ice, 15 were burned, 24 snagged, and 5 destroyed by being struck by other boats—thus 51 were lost by accidents. The investments in these boats are now decidedly unprofitable—the business is overdone, and though of incalculable advantage to the valley of the Mississippi, they are too often the ruin of their owners.—[Moor's Price Current.]

ENCOURAGEMENT OF LEARNING AND THE FINE ARTS IN FRANCE.—The annual expenditure of the State and of the Civil List, for the several establishments in favor of Learning and the Fine Arts, is estimated at 120,000*l.* a sum tenfold the amount of that which is expended for similar purposes in Great Britain. This sum is exclusive of various extraordinary grants of large sums of money devoted to the purchase of collections of marbles, coins, and antiquities.